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Report of Select Committee
on the
Seat of Government
for the Province
of 1854

REPORT

ON THE

MILITARY EXPENDITURE

OF THE

HONOURABLE EAST INDIA COMPANY.

ADDRESSED TO

MAJOR-GENERAL THE HONOURABLE SIR JOHN MALCOLM,
G.C. B.K. L.S., *Governor.*

By LIEUT.-COLONEL EDWARD FREDERICK.

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It is feared that many verbal errors and inaccuracies will be found in this Report. The friend, to whom the MS. was forwarded from India to be printed, is entirely unacquainted with those details to which the Report relates: nor did he think himself justified in seeking assistance elsewhere, as the document is intended only for private distribution among a select few.

REPORT.

To MAJOR-GENERAL THE HONOURABLE SIR JOHN MALCOLM, G.C.B.K. L.S., *Governor.*

Honourable Sir,

I HAVE the honour to acknowledge your commands under date , and in obedience to them have employed myself in the contemplation and arrangement of the several subjects which you have deemed it requisite I should report upon, from such sources of information as I may be in possession of.

In attempting to discuss such serious and extensive questions, I trust I shall be satisfactorily meeting your wishes, by stating my own conception of the objects which you propose should engage my attention. The following points, I presume, may be admitted as forming the leading principles of the inquiry:—

I. The examination of the reforms which you have introduced at this Presidency in every branch of the military system involving expenditure.

II. How those reforms appear to be progressively working, and their probable result.

III. Their comparative bearing to the same departments at the other Presidencies. And,

IV. The financial result as to the œconomy and efficiency in expenditure.

If the preceding ideas present a correct view of the objects contemplated by your instructions, I shall enter upon the discussion at once, with the hope that the mode in which I carry it on will evince if I have lost sight of that salutary rule. I hope my anxiety to be understood, will not fail me as a sufficient palliation for any trespass of the kind.—As a commencement to the work, I shall proceed to take up one of the largest branches of the public service for examination—

The Commissariat.

This department, when instituted at this Presidency in 1811–12, was framed on the model of the one at Madras: but it was soon felt that modifications more consonant to the nature of our own service and country should be introduced. To avoid prolixity in a long account of its subsequent growth, I shall only observe, that since that period the number of its officers has increased from six to nine, and the number of conductors in a like proportion.

Its establishments also (I mean those exclusively attached to its offices,) and its general expenditure kept pace with this increase: but it must be remembered that the numerical strength of the army had nearly doubled itself during the same period, and the territory over which the troops were dispersed, and the department had consequently to extend its operations, had spread from the confined limits of a province or two to the range of a kingdom *.

That the expense of such operations should be excessive, cannot excite surprise; but why they should not gradually have fallen into their relative position on the recurrence of peace, now seems to give rise to a general and serious complaint.

This may in part be ascribed to the nature of the department, and of Indian warfare; for it is well known that the expenditure cannot be calculated upon fixed, but presumed data, so as to produce a probable conclusion. The amount of establishments numerically, and in cash particularly, during the period of war cannot be controlled by fixed numbers, bearing a regulated proportion or analogy to the number of troops employed: for instance, the expense of an establishment for two companies of Europeans in the field, would not, as one might expect, be the fourth part of the one requisite for a whole regiment of eight companies; but it would on the contrary be at least one third of it, and the expense of hospital equipment, as far as the Commissariat is concerned, would not be wide of this estimate. This does not include the number of cattle, tents, followers, and provisions. I merely mention this for a right understanding of the nature of the department, being, as will be seen, one chiefly of contingencies, indeed of accidents, that govern the demands as well as the resources, which latter, duly managed, lead to an effective state of a useful Commissariat.

Where the department in peace time is merely an office of receipt and issues, it loses much of its labour and responsibility; and there can be no reason why it should not fall into a similar routine as the other offices, and proceed upon fixed methods, requiring few or none of those exertions of a mind fertile in expedients, to meet unexpected exigencies in the progress of public business.

* The Presidency of Bombay alone exceeds, I believe, 14,000 square miles.

In the above state of things, the military expenditure had swelled to an unexpected height, and only at the termination of the struggle for power was it felt as a burden upon the revenue; for it is not less remarkable, that though the settlement of our conquests was completed in 1823, yet the increase of expenditure now complained of is to be looked for from that year, and has grown up during a period of comparative, if not complete tranquillity. I do not introduce this or any other observation with any intention of making allusions to political events that may be deemed foreign to the tenour of this paper; I merely touch on them as connected with the spirit of it, or in fact accounting for the extension of our establishments, and their consequent drain on our resources.

That "the success of armies frequently depends on the state of equipment" is, I believe, no novel doctrine; and I need only allude to the rapid and successful movements of our troops in this country, for some years past, as fairly to have been promoted by the care and attentions in our preparations of the several departments, which rendered the soldier always ready and effective. I shall waive any allusion to my own experience, but appeal for confirmation to the excellent state of the equipments that enabled our troops to move with such celerity, and communicate on a sphere of action of near thirty degrees of latitude.

I take the Commissariat department, as the one best calculated to exemplify the variety that existed, when one regulated mode was neither courted nor acted upon, though it had been so frequently recommended by the Honourable Court. This neglect of uniformity, and the absence of mutual intercourse of the officers of this line at the several Presidencies, produced what I deem mischiefs inseparable from such diversity, and particularly in the delegation of the powers exercised by the officers at the heads of the several branches of it in India.

The unparalleled career in which we acquired such an extraordinary extent of dominion, required each Government, though nominally dependent on Bengal, to act for itself, issuing such rules as local occurrences demanded, and which, from their attention being fixed on the rapid course of political events, afforded them no leisure to attend to what was in useful operation at other places, which would have progressively led, by comparison, to a beneficial uniformity of system.

It is true that most of the materials for a Commissariat previously existed, and could have been, with some additions, arranged and digested into one general code. Had this been done, instead of allowing each Government to frame rules for itself, we should not now have to lament that irregularity the prevention of which would have produced so much good. For, however merited the praises may have been that were bestowed on the officers at the heads of the several portions of the Commissariat in the field, the want of one uniform system was grievously felt during the whole of the late Mahratta war, when the several divisions of the three armies were meeting and acting together. Indeed, it rather reflects additional credit on those officers, that their zeal and talents overcame those obstacles.

The necessity of this uniformity seems obvious to all public men of the present day; and whatever may be the mode for its attainment, the reform is essential to the state of our finances, and its accomplishment seems accelerated by the very nature of our present position in India. Indeed its adoption ought to be desired, were it only to avoid the imputation of inconsistency, of a great state permitting various and incongruous modes in the conduct of their financial system, from the operation of which a simultaneous and accurate result is looked for, as if the expectation were grounded on reasonable principles either theoretical or practical.

As an illustration, I shall endeavour to show how one line of public business issuing from one main source should in its course of action diverge to points wide of each other, dictated neither by necessity nor a superior degree of utility, but seems to have originated rather from the separate views taken to constitute this establishment, and the system of supply locally in operation at the different Presidencies, than any recognized general principles.

No part of the topic of assimilation can be argued, as we would consider that of discipline, on the ground of local inapplicability of the same rules pervading the whole of India. These are widely separated: private sentiments and local prejudices have no existence in an affair of this kind; the adoption therefore of a general uniformity of powers, system, and practice, can affect the feeling of none; and the advantages accruing to the State on the score of œconomy and efficiency are incalculable in India, and the facility of inspection that it holds out to the home authorities is too obvious, I trust, to be questioned.

In Bengal, the duty of the Commissary-general and his *deputy* is that of a general supervision, ordering supplies (not of great amount) on his own authority, but requiring the sanction of Government for any large outlay—being totally unincumbered with any kinds of accounts, except in cases of reference for explanations on the charges of his subordinate officers.

This species of responsibility I conceive to be not only partial but almost nominal; for he neither receives, passes, nor audits charges and documents. On the contrary they are examined by one of the Secretaries of the Military Board, denominated "Commissariat Accountant," who refers, when he thinks necessary, to the Commissary-general for explanations, on which Government finally decide, and occasionally the Accountant *defers* to the Military Auditor-general for advice on the score of regulations.

At Madras, the Commissary-general not only carries on the duties above stated, but used to embody in one general document the whole accounts of the several branches of his department,—a most unnecessary labour and manufacturing of papers and business. He was also held responsible for the authorizing of large sums, and ultimately audited them *.

The Commissary-general at Bombay, in consequence of the late revision of the system, has got rid of the intermediate authority of the Military Board, being dependent on Government alone for sanction to his measures, exercising a general superintendence both over the several branches of his department and the propriety and accuracy of their accounts, which are audited by the constituted officer of Government, the Military Auditor-general. This clothes him with a simple and effective control over the duties of his department, while it establishes a direct responsibility on himself, productive both of efficiency and safety to the interest of the State.

I shall only add, that the powers of the Commissary-general at Madras are more extensive than those of the other Presidencies; for besides the removal and stationing of his officers at his own discretion, he has no intermediate controller.

The situation of Commissary-general is one of deep responsibility, and his office should be the source of every information relative to the department and all the army supplies; it should also conduct the examination and audit of the returns of provisions and stores, and be the channel of transmission for the accounts, with his remarks and explanations of the charges in the money bills to the Auditor-general. This plain system, so simple in operation and effective in result, must carry conviction to any mind conversant with business, as preferable to any complicated and, I may add, irresponsible mode. The plea of facilitating the settlement of accounts can hardly be a counterbalancing advantage (for the arrears prove it to be a nominal one,) to the inversion of placing duties in unexperienced and irresponsible hands and departments; nor does the increase of expenditure sanction the duties of the Commissary-general being divided with his deputy, as in Bengal, or devolved upon secretaries and others, that strictly appertain to himself alone; for who has, or can feel, so great a concern for the due performance of the duty of his department, or the credit of it, as the officer of high rank at the head? And what better security can the State require for a proper attention to its interests, than that the principal of so important a department should be the centre, not only of movement, but the efficient controller of so large a contingent expenditure, subject only to the Government itself for his proceedings, and to its authorized officer of audit for the accuracy of the departmental accounts?

In a department of this kind, upon what grounds can the objection rest, that the system of one Presidency is inapplicable to that of another? My own experience leads me to a contrary conclusion; and if the three departments were assimilated on the principle that should actuate the conduct of their business, I am convinced that the utmost benefit would accrue, producing an intimate knowledge by constant intercourse with the resources of our own territories and those of our allies, while it would relieve the home authorities from the existing necessity of sending out such enormous quantities of stores from England; the local Governments would provide for their own wants from the productions of India at a cheaper rate, thus cherishing and increasing the resources within themselves, to the natural augmentation of the revenue. A general arrangement would also materially affect the amount of the expense of the department, effecting a reduction in favour of Government, while the individuals employed will suffer no pecuniary injury. This cannot be explained in a few words, though I am fully possessed of the accuracy of the plan.

The Commissary-generals' tours should not be annual, but a general one, made when they first come into office, and not more than every third year afterwards; for the estimated expense of these annual journeys amounts to a large sum, which calls for a corresponding benefit. I am at a loss to conceive what can be done or altered annually by the Commissary-generals' visits, after the out-stations have been once inspected and arranged. If their assistants are capable persons, who possess the knowledge of their current duties and the regulations of the department, it cannot require such frequent inspection in peace times, when it is only required steadily to pursue a routine in which no exigencies can occur, which latter only belong to the movements of a war establishment: besides, the security bond every officer is subject to, protects the State against defalcations in the regular accounts, that are, or ought to be, monthly examined and audited. There is another objection to the advantages of the annual tour of the Commissary-general, particularly in Bengal, and is in a great degree applicable to the other two Presidencies, where the extent of the journey is so great and the rate of travelling so slow;—for what is to become of his own duties, and the references on the accounts of his subordinates during his absence of six or eight months every year, that are monthly sent in for examination. These applications must occupy not only weeks, but months; and the evil of delay both to the public service and the private individual is of the most serious nature: besides, the Government all this time are deprived of the opinion and advice at head-quarters of one of its most important and responsible officers.

The subject of the salaries of the heads of the department, I presume, admits of no discussion in this Report, though the same rule does not obtain as to the subordinate officers, and

* By the Honourable Court's orders.

should rest on the principle of remuneration for the degree of responsibility attaching to the extent of disbursement.—The following schedule will probably exhibit this idea in a clearer point of view than any other kind of explanation.

SCHEDULE.

Whenever the expenditure of a division averages one lac of rupees *per mensem*, it might have for its duties—

One First Assistant at . . . . . 1000 Rs. salary.
One Third Assistant at 500
One Sub-Assistant at 300

When the outlay is from half a lac to one lac—

One First Assistant at 1000
One Third Assistant of second class at 400

When the outlay is 40,000 to 50,000—

One Second Assistant at 700
One Sub-Assistant at 300

When the outlay is 20,000 to 40,000—

One Third Assistant at 500

When the outlay is 10,000 to 20,000—

One Third Assistant of second class at 400

When the outlay is 3000 to 10,000—

One Sub-Assistant at . . . . . 300. And

When the outlay is from 1000 to 3000, a Commissioned Officer as temporary agent. And finally—

When the outlay is 500 to 1000, a Warrant Officer is sufficient to superintend; and native agents might conduct the duties for an outlay of from 100 to 500.

The foregoing arrangement was principally suggested by the unaccountable disparity that was displayed in the return in Bengal from the Commissariat account,—that one officer receiving rupees 1045 salary, had an outlay of cash of 6210; another, of rupeer 1000 salary, expended rupees 20,000; and a third, a salary of rupees 700, had an outlay of rupees 69,000 per month. It would not be hazarding too much to say, that there is a similar disparity existing at Madras. I could also produce more than one instance of an officer conducting a monthly expenditure on the Bombay establishment, of near two lacs *per mensem*, receiving the salary of rupees 600.

No objection can be urged against the adoption of an equalization, as it will naturally follow, that as the higher grades have the largest salaries, so they ought to be invested with the heaviest charge.

The Deputy Commissary-general in Bengal is also a controlling officer without executive duty; thus admitting in fact that there are two Commissaries-general. This would be impracticable at the other Presidencies, as their Deputies or First Assistants are executive officers, and consequently fixed to one station.

The mode also of keeping accounts is not the same, and the differences are many and minute. Each Presidency of course prefers its own, and any one possessed of a good knowledge of business could no doubt elicit an account from the examination of them. But I trust the object in view is rather to understand systems, in order to establish a preference in favour of that which possesses the greatest œconomy with the easiest practice, than to examine trifling forms, that only constitute a part of the duties of the subordinate executive officers, or the shape or numbers of the documents used in this or any of the military departments under consideration, particularly those of the Commissariat, which from long use have at different times been adopted from their utility for the accurate settlement of the accounts.

As a leading feature of this part of the subject, I shall observe, that the preparation of the general statement of accounts one might imagine was the same all over India. So it is in its general form no doubt, but not in its arrangements—for when any comparisons are gone into, much searching and picking ensues, before anything approaching to accurate and similar conclusions can be arrived at. The constant and repeated references from England on the score of personal allowances would alone be a sufficient proof of this fact; and taking the argument as capable of illustration on the spot, we need only have recourse to the mode of writing off or estimating the wastage on liquor, which is estimated in the general books in cash. It is an article that demands the greatest care in its preservation, and is of great consumption and heavy cost.

Situated as the department at Bombay is at present, it will, I trust, be enabled to act with greater celerity, as the new arrangements have relieved it of a large quantity of extraneous business which had been from time to time thrown into it, producing the evil arising from an accumulated mass of detail belonging to other branches of the service. It may, however, be subject to one ill effect, that of dividing the public expenditure into a great number of channels, which were formerly all collected into one view, and consequently afforded a greater facility to the examination of the Auditor, who thus with ease could compare the charges in the

several bills. This pruning, however, has reduced the department to its original foundation,—a source of commissariat supply of every description to the army; not, as it gradually and latterly became, a department supplying all others with the most trifling articles required in the civil, military, medical, marine and general departments, and in some cases without due check as to the quantity and propriety of the demands. In fact it was an universal magazine, or the great bazaar of the Government. This accumulation of work, as might have been foreseen, clogged its proper working, besides adding to the impossibility of a strict control being held over such divided and minute expenditure, and produced the consequent mischiefs of delay, and in some instances of confusion.

The effects of its operations for some time must be looked forward to, and a successful result anticipated, as the labour and talents applied to its execution by the subordinate officers on a simpler plan for action, affords every reasonable prospect of such a conclusion. On this footing I take it, and will advert in the proper place to those savings that are gradually effecting from the alterations; one of the leading features of which is the plan of making supplies by contract. The advantages the Government derives from this mode are the position of check or controller for the Government, instead of that of supplier, that it places the Commissariat officer in; the dispensing with numerous and expensive establishments; the prevention of delay, and the ascertained price at which the Government are sure the supply will be made, and the total amount of the ultimate expenditure. The reduction of price also appears a matter of course; and if success attends similar attempts elsewhere, a cheering prospect from analogy presents itself to us, as to equal results attending our own plans; as I can state, from the most authentic source, that the introduction of the contract system at Madras, for the supplies to the engineers, occasioned a fall of 24 per cent. in the price of materials. Method, no doubt, and great discrimination of the capability of the means of the contractors, are indispensable qualities in the conduct of such a plan; and the comparative ease, as a novel or new experiment, with which it appears to be working, affords a pleasing presage of its ultimate success.

In Bengal and Madras, the Commissariat was more confined to military purposes, making but few supplies out of its own line, until those for the hospitals were thrown into it. The equipments, however, for the Governor-general and civil officers of Government travelling on duty in Bengal, are made by it.

Hardly any of the materials required in the manufactories of gunpowder and gun carriages, and for the erection of buildings in the military line, for the engineers, are furnished by the Bengal Commissariat, though at Madras this rule does not obtain; and those for the engineers, as stated, are mostly by contract through the Commissariat.

The main principles for the Commissariat may rather be said to have arisen from experience and successful working of the minutiæ and temporary expedients, than to have been indebted for their primary cause to any plan or theory; which latter has done but little for this branch of the military service: but in order to understand, and particularly to reduce, those principles to practical use, some of the details must be at least examined, and the labour of condensing them from innumerable trifling sources, probable estimations, and complicated calculations, cannot be estimated but by those whose experience and knowledge of this line have rendered them familiar with such an occupation. The results which have grown out of the examination of the subjects following, are, I trust, such only as the facts themselves have warranted as natural and unavoidable, devoid of any previously conceived bias to any particular feeling or system. Indeed if there is anything in the preparation of this Report that I would wish to claim as a merit, it would be the sincere conviction that I have not advocated any cause or plan, but that which I deemed entitled to a preference from its proved utility, or just reasoning, and that I review systems and measures, and not men.

Having premised these observations, for a general comprehension of the subject, I shall now offer separately those explanatory remarks upon some of the leading heads of this, and the other departments, that suggest themselves; and if I appear to enter more into detail than I had previously intimated, it must be excused me, as a natural consequence of a closer contemplation of so large and complicated a question.

Provision Department.

The system in its general principle may be called the same under all the Presidencies, as regarding the provisioning of European and Native troops from the Commissariat, in all situations where the regulations of the several Presidencies entitle them to receive rations: but this latter circumstance varies in its application; for in Bengal, Europeans, married or unmarried, receive rations from Government all the year round; at Madras, in the field, and in field stations; but in Bombay, they are provisioned only while on actual service or marching.

There are two modes of provisioning Europeans; nor am I aware that the one,—of the men dieting themselves in fixed stations, has any serious objection to it, as the men's messes are very strictly superintended, and the power of varying the materials of their food pleases them:

besides, the soldier in Bengal, if not also at Madras, would have the advantage derived from the lowness of price in comparison with what the same kind of articles would cost on the western side of India.

Here I must beg to go somewhat into detail, otherwise the conclusions I draw may have the appearance of not being sufficiently borne out by facts. The soldier in Bengal always gets a smaller ration than at Madras or Bombay, though it varies at different seasons of the year. The ration for half batta stations is peculiar to Bengal.—The following is the comparative state of rations issued to Europeans at the three Presidencies, marching or on actual service.

Bengal Field Service or Full Batta Station.		*Madras Field Service or Full Batta Station.*		*Bombay Field Service or Full Batta Station.*	
		lb.	oz.	lb.	oz.
Biscuit	1lb.	Biscuit	0 12	Biscuit	1 8
Or Rice	2lb.	Or Rice	1 5	Or Rice	1 8
Fresh meat, including bone :		Fresh Meat	1 8	Fresh Meat	1 8
for 5 months in the year	1½lb.	Salt	0 2⅝	Salt	0 2
for 7 months	1¼lb.	Wood	5 billets.	Wood	4 0
Salt	2oz.	Spirits	2 drams.	Spirits	2 drams.
Wood	3lb.				
Spirits	2drams.				

Bengal Half Batta.		*Madras Half Batta.*	*Bombay Half Batta.*
Bread	1lb.		
Meat	1lb.	The men provision themselves.	The men provision themselves.
Salt	2oz.		
Wood	3lb.		
Spirits	1dr.		

The plan of the family-man supplying his own wants, independent of any general contract entered into for the whole regiment, has public œconomy on its side, as the ration costs Government, at a full batta station in Bengal, rupees 7 12 7¼; and at half batta station, rupees 6 3 2. In Bombay, at a full batta station it costs 8 12; about the same at Madras; and throughout India no greater deduction can be made from the soldier's pay than 3½*d. per diem.* There is another difference that amounts in its effects to a discrepancy: As regards India, the non-commissioned officers in Bengal pay higher rates for their rations than the privates, though receiving no greater quantity or variety of food: it is true this is in accordance with His Majesty's warrant, but its application is both partial and local. But men in garrison stations at Bombay, being unable to procure provisions at the usual rates *during a period of scarcity*, are supplied at their own request with the ration stated in the margin*, for which they pay reas 70 or 2 annas 9⅗ pies; and when individuals or small details are marching, they are allowed 6 rupees 8 annas per man, *per mensem*, for their provisions, under the head of Dry Batta. To save the expense of the Commissariat establishments, a similar plan obtains in Bengal in giving at half batta stations rupees 5, and at full batta rupees 10, per man, as a compensation for provisions. At Madras the European troops have the same indulgence as the Native, by receiving compensation on the rise of the price of rice in the market, without paying anything for it in return.

Having condensed these details as to this head, which at all the Presidencies would be the same if acting on the same principle, I shall take that part of the system in which they differ, and proceed to the portion of the subject "The relative situation of the soldier to the State," never losing sight of his comfort and health as the prominent features of the discussion.—In reference to the individual, it will, I should imagine, be easily admitted, that in any situation he receives the best of food, if not better, from the public stores, than he can procure by an accidental contract. So far his health is preserved; but his convenience, on the other hand, may be consulted by his appropriating a small sum to the purchase of pork, fish, vegetables, &c. which he thinks indispensable to vary his food, even when receiving rations from the public stores. It follows, that in either case, as he buys these articles, he may sometimes lay out more money when providing himself; but in the latter case an arrangement is always made by the commanding officer, to enable him to proportion the amount of his mess charges, which generally exceed what the Government stoppage amounts to, the sum he can spare from his monthly pay.

Notwithstanding the deduction that would seem to follow from this reasoning, in favour of the soldier providing himself, I must still be permitted to offer an opinion, that there is hardly any station in either of the Presidencies, where the soldiers would not prefer receiving rations from the Commissariat, if they were somewhat varied, to the supply from a regimental contract, owing both to the price he pays being less than he could procure the same quantity of meat, bread, &c. for, in the market throughout the month; and the advantage he has of his Commis-

* One pound of meat, two pounds of wood, half a pound of rice, one pound of bread.

sariat provisions being reported on by a committee, if he thinks them in the slightest degree objectionable.

My own experience in the command of a European regiment, as well as serving much with European troops, induces me to prefer, as one general system, the provisioning of the troops from the Commissariat, as it combines the two leading points of health and justice to the soldier, and the consequent efficiency of his exertions to the State. I cannot admit it as a serious inference, that discipline would be affected by the adoption of either measure, as it has nothing to do with the arrangement for supply. It may be urged, that the ration could be procured in some parts of India for the same sum that Government allow for it; but this would be too partial an admission to affect an extended argument of this nature.

I shall now turn to the other side of the topic, and look upon it in an extended light, both as it affects the soldier and the principles on which it operates towards him. The keeping of Europeans in garrison in Bengal *is more expensive than either at Madras or Bombay*, because they receive rations all the year round; but in the field, the Madras army is the most expensive, from a rule, peculiar to itself, of giving full batta * to the soldiers in addition to their pay, and afterwards making a deduction† equivalent almost to the batta; and it is to be observed that the Madras soldier's pay‡ and deduction for provisions vary from those of the other Presidencies. At Madras, by a misconception, I presume, of the orders of the home authorities, the pay in English money of a shilling *per diem* is first converted into pagodas, and then into rupees, giving by these means a larger sum, rupees 13—2, while the recovery for the ration is not only higher than elsewhere, being 4 rupees 7 annas for a private of foot, but does not rise in proportion with the several non-commissioned ranks, and draws a distinction between the cavalry and infantry, as is done in Bengal. Nor is the appearance of consistency preserved; for while 4r. 9a. 9p. are allowed as full batta (that is to say, provision money), a deduction only of 4r. 7a. is made for the rations.

At Bombay the mode is simple. In garrison or stationary, the soldier receives 12rs. per month, and provides his own provisions. In the field, or marching, he is provisioned by the Commissariat, and pays 3r. 8a. (or 3½*d. per diem*) for his ration; but has one great advantage in a public point of view, for he is at all times provided with cooking utensils, has them tinned, and carried for him,—by which he is always efficient as a soldier, having nothing to think of but himself and his accoutrements. While at Bengal and Madras he is put to this expense; and consequently it is but a natural feeling that he should be anxious about his property, and sometimes have his attention distracted as to the probability of its loss, when he ought to be thinking of his duty;—not to advert to the injury to the service, of the soldier not having his meal in due time. This cannot occur to the Europeans on the Bombay side, as everything is done by the public departments, and the commanding officer immediately complains, on the occurrence of any deficiency.

This idea was probably present to the minds of the Madras Government, as chatties or earthen pots are given to the men; but this is a poor substitute for the other mode. A question might be asked as to its being more expensive. The introduction of it generally certainly would; though it is essential to state—the scale lately introduced at Madras does not provide for the comfort of the soldier in any degree, as would be expected, in proportion to the great dissimilarity of its system to those of the other Presidencies: and as to comparative expense, I have no hesitation in affirming it to be greater than the one that prevails at Bombay or even at Bengal.

The mode also of recovery from the soldier varies, as has been shown, all over India; and why it should do so in any case I am at a loss to conjecture, for it answers no purpose of regularity or œconomy; and these anomalies (for they really are such) give rise to those frequent and reiterated orders, complaints, and modifications by the Honourable Court, the perusal of which by an inexperienced person would lead him to the conclusion that something like confusion existed in so essential a branch of their service.

In all general arrangements and plans, it is but too obvious that distinctions of any kind are productive of no good in a great public service like that of India; by any attempt to make the receipts in one place counterbalance, or compensate for payments made in another: this variable mode should give way to the establishment of one uniform and general system. This idea seems to have suggested itself more than once to the Court of Directors, and may have originated their orders at different times, directing the practice in force at one Presidency, which seemed to them the best, to be adopted at another; and my minute on this subject of the 20th July 1829, six months previous to the receipt of their orders issued at Bombay, is in complete accordance with this opinion, proving the practicability of the measure in all its parts.

The Madras deduction of rupees 4—7 may appear larger than the Bengal and Bombay one of rupees 3—8; for the Madras soldier's pay is calculated at 13 rupees 2 annas, instead of rupees 12, to which first sum the deduction bears a relative proportion; and the general expense is, as I have already shown, greater in an extraordinary degree than that of the other Presidencies in the field, not from the Commissariat charges, which cannot be correctly

* Four rupees nine annas. † Four rupees seven annas. ‡ Pay, thirteen rupees two annas.

estimated in campaigning (as they vary every month), but arising from the plan of giving the batta of rupees 4—9.

I feel the greatest difficulty in attempting to frame a comparison of the three establishments, and will, to preserve perspicuity, notice Bengal, which will be the best example on the whole, on the score of charging the soldier for his ration all the year round. He receives 8 rupees 8 annas pay, and is fully provisioned;—thus in the first instance complying with the King's warrant as to the 3½*d. per diem* (equal to 3 rupees 8 annas) being deducted from him;—but the Government purchase back from him the dram of liquor at the rate of 3 rupees 2 annas per month; and thus, by a double arrangement of taking with one hand and giving back with the other, the soldier in reality gets 12 rupees as pay, and his provisions. Whereas at Bombay, under similar circumstances, he pays 3 rupees 8 annas for his ration; and at garrison stations he pays rupees 1—4 for his liquor out of his pay, besides subsisting himself; and the one at Madras pays 4—7, and in garrison 1r. 1a. 5p. for liquor, and subsists himself also.

It may be equally applicable in this place to show the general expense of provisioning the soldier at the three Presidencies (in the field), including his pay, provisions, and compensation money:—

	Rupees.	Annas.	
At Bengal	18	0	including establishment, carriage, &c.
Madras (including batta, but no compensation)	23	5	
Bombay, (neither batta nor compensation)	18	8	

Garrison Cost of a Soldier:—

	Rupees.	Annas.
Bengal	14	13
Madras	13	2
Bombay	12	0

This statement, it is to be recollected, is not founded on the same comprehensive basis as that of the Auditor-general's, as the pay and Commissariat expense only are taken into account; the other items, of clothing, &c., I do not conceive as belonging to this question, and would only be used on the argument at large, when speaking of the soldier as he stands the State in, for every expense.

It is also to be assumed from similar data, that the actual loss sustained by Government for provisioning troops on the three Presidencies, arises from the difference of the actual cost of the ration to Government, and the price at which it is charged severally. At Bengal, a soldier in garrison costs 1 rupee 11 annas more than at Madras, and 2 rupees 13 annas more than at Bombay; and therefore, taking the number in Bengal to be 11,000, the amount would be about Rs. 2,23,000 above Madras, and 3,72,000 above Bombay, supposing each Presidency had the same number of troops—for the comparison cannot be made in any other way: and by the same parity of calculation, the Bombay plan is Rs. 1,47,000 cheaper than the Madras *per annum*; and if the plan of the Madras batta be considered, it follows that they could not send 5000 men into the field without exceeding the expense attending this number at the other Presidencies by 4 lacs *per annum*. It must therefore be evident that the arrangement on the western side of India, on the score of effectiveness of the soldier, and œconomy, cannot be equalled by the modes at Bengal and Madras. On the question of the advantages and disadvantages between the system of Bengal and Bombay, it is only left for me to observe, that the comparison becomes still more favourable to Bombay, when the question of foreign expeditions occurs. Two thirds of those generally consist of natives; and as no deduction is ever made from them for rations in Bengal and Madras, the expense is consequently a dead loss; whereas at Bombay there is a set-off of 33½ reas per man *per diem*, or the batta of Rs. 2—8 per month. There is another difference, however,—that there are no hospital stoppages at Bombay and Madras, as at Bengal. All these dissimilar points should be cancelled, and a general uniformity established, upon a basis that can be easily made to meet the prejudices and provide for the comfort of the individual, both European and Native.

In campaigning, the Bengal plan can boast of a considerable advantage over the Madras one, but nothing to speak of over Bombay, except the cheapness of provisions and servants, which is adventitious from local circumstances, and not ascribable to perfection of system. If therefore the three Presidencies possessed the same means as to cheapness, to which side the preference would incline would be immediately seen, as there is a clear large saving by the Bombay plan of allowing the troops to provision themselves. From these and other sources of information, it will be obvious that the humane care at all times evinced by the British Government for the lives of its soldiers (and in no country is it more conspicuous than in India *) has a direct tendency to charge the State with every extra expense, which the moiety of the soldier's pay of 3½*d.*, ordered by His Majesty's warrant, is quite inadequate to cover. It has probably from this

* In Ceylon he is charged 6*d.* for 1lb. of meat, 1 seer of rice, and 2 drams of arrack. In India he receives nearly twice as much in value, and never can be charged more than 3½*d.* for it.

feeling become an established usage in Bengal to provision Europeans in all situations, charging them (agreeably to the regulations) less for their rations than the provisions actually cost the Government. This conviction gives rise to the necessity of ascertaining the lowest rate at which the ration can be supplied to the soldier when not on actual service; for when in the field, it of necessity varies every month: no average can be formed, as no expense is spared in keeping him efficient as far as the Commissariat is concerned. All calculations therefore must consequently be confined to fixed stations, or movements from station to station, under whatever denomination of full or half batta.

In any change, I should rather incline to the introduction of a modified plan, differing from all the modes at present in use, and at the same time distinguishing between the ration for field service (where a man requires more sustenance to recruit his physical strength), and the one for fixed cantonments, whether full or half batta. It appears that the Europeans at Madras never receive biscuit but when the rice is bad, the advantage of which might be questioned; and I certainly would not advise its adoption at the other Presidencies, especially as the quantity is only $\frac{3}{4}$lb. bread. A healthy man marching can scarcely manage with less than one pound of bread; this opinion might be supported from the practice of medical men, who allow their patients in hospital $\frac{3}{4}$lb.: however, if soldiers are to have the same rations while stationary as marching, the proposed plan in the annexed Table, which exhibits but little variety from the old one, might be adopted; but as it is equally difficult to cause variety without entailing a greater degree of expense, I have been guided, in connecting economy with efficiency, in adhering to general and not partial principles of calculation.

TABLE A.

Proposed Ration to Europeans Marching and Stationary.

Field Service or actual Marching. *Ration Weekly.*		Stationary Cantonments on Full or Half Batta. *Ration Weekly.*	
1 $\frac{1}{2}$ Pound of Meat	7 days	1 Pound of Meat	7 days
1 Pound of Biscuit or Bread	7 do.	$\frac{3}{4}$ Pound of Bread	7 do.
$\frac{1}{2}$ Pound of Rice	4 do.	$\frac{1}{2}$ Pound of Rice	3 do.
$\frac{1}{2}$ Pound of Flour	3 do.	$\frac{1}{2}$ Pound of Flour	4 do.
4 Pounds of Wood	7 do.	2 Pounds of Wood	7 do.
1 Ounce of Salt	7 do.	$\frac{1}{2}$ Ounce of Salt	7 do.
2 Drams of Spirits	7 do.	1 Dram of Spirits	7 do.

Salt meat never to be issued but on occasions of emergency, and then only one pound per man.

In order to introduce flour (an article the men are fond of) as enabling them to make puddings, dumplings and apps, and reducing the quantity of rice, which they generally dislike, seldom using it in anything but curry, and which they conceive a bad substitute for bread or biscuit, either of which they deem indispensable as a daily ingredient of their meals.

As an argument of this kind must to a certain degree be hypothetical, and can only be partly supported by facts, I shall venture to explain my view of the subject by entering on the largest plan as the safest one for elucidation, and take Bengal as the best adapted for the purpose, because the troops in Bengal are provisioned all the year round. And it has been calculated from the average current prices, that the difference between the present ration (without liquor) and the new one would be a saving to Government of 5 annas 9 pice per man *per mensem* while stationary, but when actually marching, or on field service, the loss would be 9 annas 4$\frac{1}{2}$ pice. Pursuing this calculation, I shall take it as a fair concession, "that hardly one fourth of the Europeans will be ordered for service or move from one cantonment to another *every year*," thus taking all disadvantages; but admitting that proportion to be marching the whole year round, the Government would lose in that year rupees 20,391 0
But by the remaining three fourths of the stationary number would gain rupees 36,871 14

Thus giving rupees 16,832 13

as a clear profit *per annum*, allowing one fourth of the Europeans to be in constant movement. This saving will of course increase in the same rate that the number of field or moving regiments and detachments decreases; but a profit is never contemplated when discussing the subject of the expense a State incurs in equipping or providing for its troops. All I believe that can be aimed at is a plan founded on the most œconomical principles that will ensure efficiency.

To show the relative situations of the soldier under the three Presidencies on the score of pecuniary advantages, with the treatment he experiences under each respectively, I shall select the soldier of the third class, or under seven years' service, as best adapted for the calculation to be founded on; and then the following statement will prove that the soldier in Bengal receives in hard cash more money actually than the soldier at Bombay, and but a little less than at Madras.

Table of Expenditure for a European on the three Presideneies for a Month of 30 *days at Full and Half Batta Stations.*

Full Batta Stations.

Bengal.				Madras.				Bombay.			
Pay	8	9	10	Pay	8	11	0	Pay	8	8	0
Compensation for Liquor	3	2	0	Batta	4	9	9	Nothing.			
Total Cash	11	11	10	Total Cash	13	4	9	Total Cash	8	8	0
Cost of Provisions furnished to each man	4	9	$7\frac{1}{4}$	.....	8	12	0	.....	8	12	0
Total cost to Government for a soldier exclusive of Carriage, Cattle establishment, &c. Rs.	16	6	$5\frac{1}{4}$		22	9	0		17	4	0

Half Batta Stations.

Bengal.				Madras.				Bombay.			
Pay	8	9	10	Pay	13	2	0	Pay	12	0	0
Compensation for Liquor	1	9	0	Deduct Liquor	1	6	0	Deduct Liquor	1	4	0
Total Cash	10	2	10	Total Cash	11	12	0	Total Cash	10	12	0
Cost of Provisions to Government for one man	4	10	2	Subsists himself.	-	-	-	Subsists himself.	-	-	-
Total cost to Government....	14	3	0	.....	13	2	0	.....	12	0	0

It is only requisite here to observe, that in Bengal the soldier at a full batta station receives (including his pay and compensation for his liquor) 11r. 11a. 10p., and at half batta stations 10r. 2a. 10p. At Bombay on field service he receives 8—8 exclusive of the deduction of Rs. 3—8 for his ration. Stationary (having paid for his liquor but getting no ration) he receives 10r. 12a. At Madras in the field he receives 13—5 (after paying for his ration), and at garrison stations 11—12, after paying for his liquor and finding his own provisions: which at a moderate computation will cost rupees 5—4; thus clearing at the end of the month not more than rupees 5—8 Bombay, and 6—8 Madras, to cover all his other expenses of dress, tobacco, pipeclay, cook, &c. It is therefore assuming nothing more than facts warrant, that the soldier in Bengal has a third more money at his own disposal for drinking (if he be so inclined) than at the other Presidencies.

The question of provisioning native troops is a short one, when they are entitled to rations, which is on foreign service alone; and though it is an expensive, difficult, and extensive task, as well as supply, the provisions are given at Bengal and Madras gratis; but at Bombay a deduction of $33\frac{1}{3}$ reas *per diem* or rupees 2—8 *per mensem* (the full batta) is made to counterbalance the expenditure: while the granting compensation when grain is high in the market, is a practice throughout India, with one peculiarity attending the mode at Madras, that the European troops participate in it, which must increase the general expense, as they pay nothing in return*; although troops who in times of scarcity receive provisions from public stores have a deduction made for the same from their pay.

The humanity and consideration displayed in the late orders of the Court on the head of rations for invalids and recruits from Europe, have their full effect; as all regulations springing from the like motives must invariably tend to the good of the service, and ought to be made applicable to the sick on foreign service.

Service on Board Ship.

The subject of European and native troops on board ship, though a most serious one, must still be explained by Tables†, which I have appended, accompanied by explanatory notes; nor do I conceive that I am treating the question lightly, by recommending so concise a mode for its comprehension. The necessity of so doing arises in a considerable measure from the great length I have been obliged to enter into of the description already of the preceding heads. I shall therefore only add, that by the comparative view displayed in the Tables, it appears that the

* This is probably a species of set-off for the Europeans' never getting biscuit.—E. F.

† 1, 2, 3, 4, 5, 6, 7, 8 and 9. See Appendix for these Tables.

greatest difference is on the Madras side, and that the Bengal and Bombay scales assimilate more to each other. These two latter are also less expensive and better adapted to the several castes of men that compose those two armies; the items of difference are pointed out, and as they exceed or fall short, to justify either their adoption, or rejection, as the utility of the case must decide on the preservation of the health and comfort of the troops as the primary object.

No Government ever paid more attention to the religious sentiments of its subjects than the Honourable Court, who have uniformly given the strongest proofs of their regard at all times for their feelings, and particularly those connected with the prejudices of its Hindoo soldiers. I therefore feel myself in this situation encouraged to express myself with more confidence in thus promptly stating the apparent oversight of a practice so intimately interwoven with the very first principles of our rule, being fully aware from long experience of the great influence afforded by our conciliation of those peculiar feelings, and the evil of damping the affections of this high-spirited race of men, that must ensue by a departure from a long-established system, whose leading feature is benevolence, founded on the soundest policy. The circumstance I allude to is as follows:—

The Honourable Court in the Bombay general order December 10, 1829, directs the whole of the Madras system of victualling troops at sea to be enforced at Bombay, which may have arisen from a slight oversight; and I should ill fulfill my own duty were I not to point out the discrepancy for higher consideration. It would be superfluous here to enter into a detail of the articles proposed for the subsistence of Hindoo troops on ship board, but can be seen in the Tables No. 1, 2, 3, 4, 5, 6, 7, 8, and 9. I shall only state it as a known and admitted fact, that Hindoos of a certain caste cannot cook on board ship without the loss of caste: of this class of Hindoos there are upwards of twenty-two thousand in the Bombay army (more than two thirds), and the subsistence directed by the Court's last orders consists of articles that must be cooked before they can be eaten: and are adapted to Musselmans and those lower castes of Hindoos that can cook on board ship. I cannot pretend to be intimately acquainted with the high-caste Hindoos in the Madras army, who can cook on board ship without derogation to their religious tenets; but of this I am convinced, that no Rajpoot from Hindoostan or the Northern Provinces could partake of provisions prepared on board ship without its being followed by degradation of caste.

I beg to repeat, that had I not been most anxious on so momentous a question, both as an officer of the native army and a responsible public officer of Government, I should have deemed the preceding observations more than unnecessary when the orders of my superiors had been issued; but on these grounds of public regard towards my profession, and respect to my Government, I conceive I should have had but a very limited sense of my duty, had I omitted to point out that which appears adverse to the religious prejudices of so large a portion of our Hindoo army, and can hardly be said, on a fair view of its anticipated practical application, to be entirely divested of the appearance of anomaly.

Arrack.

This is an article of such universal use and high price that it requires a separate consideration, which is still more requisite from the care Government have always evinced, not only as to the wholesomeness of its original state, but also in directing it to be mellowed by keeping before it is issued to the troops. This, added to the circumstances of the rate at which the soldier receives it, subjects the Government to a very heavy expense, though it is attempted to be shown in Bengal that a profit is derived from it.

At Bengal the Government purchase spirit at 1 rupee per gallon, proof, free of duty; and retail it at 2 rupees a gallon to the men, 10 per cent. under proof. At Bombay it is bought at 1 . 3 . 4 per gallon, including town duty, and retailed at 1 . 2 . 66$\frac{2}{3}$ per gallon, 24 per cent. under London proof; while at Madras, the liquor is purchased I believe at Colombo, but I am not aware at what rate or proof; however it is retailed to the soldier at 1 rupee 12 annas per gallon for the regulated allowance, and at 2 . 5 . 4 per gallon on the canteen account: so the advantages of the Madras Presidency in this respect cannot be stated, but may on examination be found to fall short of the expenses that are incurred by Government on that account.

It has been argued in favour of the Bengal system, that the gratuitous donation of the ration to the troops is compensated for to Government by the price at which the liquor is sold, as well as of the gain that arises between the high degree of proof at which the rum is received, and the 10 per cent. lowering at which it is issued, yielding in all about 112 per cent. profit. This is doubtless an argument *prima facie* very good but; it is in fact a conclusion shown from appearances, and not a deduction from reality, as a matter of figures. I shall therefore submit the grounds of my opinion for believing that the Government does not gain by this species of traffic.

If by giving compensation, still it is maintained to be the cheapest plan to save innumerable charges of transport, &c. as well as to defray the price of the gratis ration, the argument be-

comes weaker by extension; as it only proves that the profit by the sale of the liquor is still less adequate to meet so many demands and cover the usual losses; and therefore can be admitted to bear no part in reducing the expense of the donation, the price of which would alone demand it.

It is evident that the Government, in paying compensation in Bengal to the men, lose about 107 per cent. as long as the men draw only their regulated allowance of one or two drams, according to the station of full or half batta they are at; but if they were allowed to draw above their regulated quantity, the Government would gain by the excess in the retail price about 22⅔ per cent. In explanation of which it is only necessary to state that the rum is purchased at London proof for 15½ Sicca annas or St. 1 . 0 . 2 per gallon, and issued to the canteens at 10 per cent. under proof, and at 2 St. rupees the gallon, for 11,400 men, the number provisioned in Bengal.

The compensation paid is as follows:—

For 5,619 men at Full Batta stations	17,559	6
For 5,781 ditto Half Batta ditto	9,032	13
11,400 Monthly amount	26,592	3
Suppose the same number of men draw 2 drams from the canteen daily, the amount is	34,378	2
The monthly saving is	7,785	15
or annually	93,431	4

which will be hardly sufficient to cover all the charges of every description for transport, wastage, &c.

The result of the foregoing calculation would be, that if 2 drams were issued to the canteen for each man at the retail price, the amount monthly would be . Rs.	34,378	2
This is making a fair allowance for sick, prudent, and saving characters. But the Government compensation to the same number of men amounts to	26,592	3
Leaving monthly a balance of	7,785	15
or an annual one of	93,431	4

in favour of Government retailing the liquor and paying the compensation also.

But there is probably an objection to the plan in question not to be overlooked,—that the men lose the monthly compensation money of rupees 3 . 2 at a full, and Rs. 1 . 9 at a half batta station. But as the Bengal Government introduced this payment about two years since as an advantage to the men and œconomy to themselves, while it operated as a great increase to the soldier's receipts, beyond that received in other parts of India, which might not have exactly been contemplated, it might seem worthy of consideration how far it would be equitable, or, more correctly speaking, indulgent, to withdraw the grant, now forming so considerable a part of the soldier's income.

The advantage of this mode depends on the rate at which the rum is bought, and afterwards sold, assuming that the wastage, dryage, &c. are covered by this advance of price: but it is also to be recollected, that the liquor must be kept in store for three years before it is issued. The wastage therefore for that period alone must be calculated from 2 to 4 per cent. per annum for vats of 3000 gallons, from 9 to 12 for leagures, and from 15 to 20 for hogsheads; so that the advantage that is gained by the lowering of the liquor 10 per cent. on issue, and the advanced price at which it is sold, is barely equivalent to the loss occasioned by evaporation, soakage, and leakage of the first year; and the loss sustained during the remaining two years that the liquor must remain in store to become mellow, has nothing left to counterbalance it. This estimate does not embrace the larger expenditure of wastage on field service, where it is immense, but confines itself to the circumstance of the most careful management, nor does it include any expenses of warehousing and other contingencies.

At Bombay the liquor (arrack) is purchased at 24 per cent. under London proof, and issued at the same, after being kept eighteen months in store; as it is considered to have become sufficiently mellow in that period: one year and a half's wastage is by this means saved, besides other expenses of labour, watering, &c.; and the price which the troops pay for it is an advance of 41⅔ per cent. exclusive of town duty, which covers most, but not all, the charges. The following statement of the advantages and disadvantages in the purchase and issue of spirits at Bombay exhibits the details, which if applied by way of analogy for calculation would furnish no insecure data to proceed on, in judging of the systems pursued at the other Presidencies in forming a fair and general result.

The arrack is purchased at 24 per cent. under London proof, at 1 rupee 4 annas per gallon, exclusive of town duty, and retailed to the canteens, as well as issued to the troops, at 1r. 10a. 8p. per gallon.

The amount annually expended is 120,000 gallons, which gives Government a gain of	Rs.	50,000
The wastage and dryage in stores, conveyance, evaporation, &c. under the whole Presidency is about 18,000 gallons, or	Rs. 22,500	
Indemnification of one dram per gallon to the troops on 120,000 gallons, is gallons 3000, or	Rs. 3,750	
Hamallage on consignments to out-stations, &c. annually	12,000	
Cost of vessels to retain and transport, repairs, &c. per annum	11,950	
Expense of establishment of conductors and coopers, &c. per annum . . .	7,092	
Warehousing at 5 per cent. on 200,000 gallons, though most of the warehouses are public buildings	10,000	
		67,292
Probable loss to Government per annum, exclusive of town duty, while the troops are stationary, but must be considerably increased by any field forces moving, by its transport carriage, and the great wastage unavoidable from marching, and exposure to the heat of the sun all day long, ...		17,292

I therefore reply, that it is a result that has been clearly arrived at, that the Government do not, nor can, derive any profit from the present mode of supplying liquor to its soldiers,—a deduction I think that seems to arise from the examination of a practical system, but divested I trust in the discussion of the least shade of bias or wish to substitute one hypothesis for another, leaving the facts as they exist for higher authority to draw an unerring conclusion from.

As to the alleged evil of the men appropriating the saving they may make from their provisions to the purchase of bad liquor, the prevention to this is good messes, and the canteen supplied with wholesome spirits retailed at a moderate rate. All this must rest entirely with the commanding officer and the internal œconomy of the regiment. The soldier always takes good spirits in preference to bad, when it comes within his means; the canteen is preferred to the precarious way of getting unwholesome spirits by stealth, though he might get more by the latter mode for his money, which however subjects him to the penalties for irregular conduct. The only objection he has to it is, that he is more immediately under the eye of the non-commissioned officers as to the quantity he drinks.

It is remarkable, but well known, that amongst men in camp or even in open cantonments, where the facilities of obtaining liquor are greater, less drinking is observed than when confined to barracks. This may be accounted for in a moral sense as arising from their minds being more occupied and amused, as well as their receiving daily what they generally deem a sufficient quantity, two drams.

This argument is more than hypothetical; for besides what has been said above, it is also founded on the feelings and inclinations of the men, who would thus have the choice of receiving the full allowance or only a part of it, as best pleased themselves. I might further add, that the Europeans on the Bombay side who have had the option of drawing two drams during the rainy season invariably took it.

By the Bengal mode and rate of 100 per cent. of retailing spirits to the canteens, being adopted at Bombay, and no per centage taken on the regulated allowance issued to the men, the Government would not be subjected to a greater degree of loss or deficiency than at present; but the new mode would furnish an indulgence to the men who at half batta stations would have to pay monthly only 15 annas per man for their liquor, instead of rupee 1—4 as they do by the old plan:—this is only putting him on a par with the soldier in Bengal.

The Bengal plan of allowing compensation for liquor to the men at 10 pies per dram in garrison and the field, will not be practicable at Madras and Bombay in garrison stations, as the troops are not entitled to any liquor without paying for the same; while in the field this species of indulgence will increase expense, as shown for the Bengal soldier in every situation, and that to an enormous extent; for taking the European troops at Madras and Bombay to be 16,000, upon the garrison allowance of 1r. 9a. per man per month, it will be about three lacks of rupees *per annum*.

There was a charge made in Bengal for rupees 4716 wastage for liquor, which agreeably to public information forms a per centage nominally of 9000 gallons, or 4½ per cent. only; but the real issue cannot be estimated under 200,000 gallons (two lacs), the actual wastage upon which would exceed 20,000 gallons per annum, if calculated by actual occurrence. But the fact I believe is, that the 10 per cent. gain by hydrometer variation between the receipt of the liquor from the contractor, and the lowered proof at which it is issued to the troops, is thrown in to relieve the *bonâ fide* sum of the wastage; for it is not carried to the credit of the Government in any of the accounts. This therefore would account for the wastage being apparently so low; and when added to it would bring it to its real maximum, and show that it is absolutely 14½ or 15 per cent. instead of 4½ as stated above.

All this requires to be rectified; because it is not only a fictitious mode of keeping accounts, leading to no good end, but may tend to demoralize the lower servants of Government

witnessing such an admitted fallacy, whilst it places those of the upper class in a questionable situation. All wastages should be ascertained by survey committees on the spot, the reasons assigned, and the quantity written off in kind, and not in money; so ought the proof of the liquor received to be ascertained by committees, and entered on the credit side of the public accounts.

To charge wastages in cash is no doubt apparently the simplest, but decidedly not the most accurate mode of exhibiting expenditure, as shown above; and I trust that the introduction of this homely detail will not be judged as a superfluous explanation, but rather be admitted as a useful illustration of facts and systems.

Under these varying modes, it is difficult to pronounce which is the best; but a uniform plan ought to be adopted by the liquor being issued at one rate and one proof, and the charge for it to the men the same all over India. There should be no excise duty levied on it, for it stands to reason that it is a fictitious style of keeping accounts, to pay duty on an article for our own consumption, for the Government itself pays the duty that it levies, which has made an increase at Bombay nearly of rupees 1250 per annum, for measuring the liquor that the collector may levy the duty. This would be one step to clear off the mist that hangs over the question, of what a European soldier really costs the State, as the mode of estimation is now so variously conducted that hardly any one seems to know the method of ascertaining it accurately.—These considerations induce me to think that 50 per cent. on all the establishments, exclusive of duty, would cover the loss under the operation of a uniform system; but I very much doubt if twice that sum does it at present.

Hired Cattle and Followers.

It must be obvious from a glance even of this widely spreading department, how impossible it is to enumerate the particulars of the resources of each Presidency, and the mode each has pursued of adapting the different kinds of means to their several wants. The effects claimed by the Government from this line are both extensive and important, in as far as they relate to the movement of an army and its effective operation, not only enabling it to perform the most rapid marches to insure success, but by its weakness paralyzing all military enterprise. Situated as the Indian army is, scattered over such an immense space, it would still not be difficult, with the information in our possession, to propose after so much experience a connected mode of conducting this branch of the service, which formerly was thought of itself of such moment, when our armies were small, as to be made a separate department, with an officer at its head, with a salary double that of an individual who now conducts the whole of the Commissariat for a field force. The wished-for examination labours under more than one difficulty. The cattle required are for various purposes,—the carriage of stores and provisions in general, and those for the draught of the heavy and light artillery and ordnance store and pontoons; for these uses camels and bullocks can be reckoned upon as procurable all over India, and do not require much difficulty in arranging into one class. It is of course clearly understood that this does not include in any way the horse artillery; and in alluding therefore to bullocks alone, the question is a simple one, and must rest where it is; and though mules have been tried for light field guns, I am persuaded that whatever quickness they may exert in the usual parade evolutions, they will fail in a campaign; and if ever they take the field, it will be seen that additional bullocks will be required to be attached to them to assist up hills, and the steep banks of rivers and nullahs, that form such common obstructions to a line of march in this country. I need not dwell on the expense of mules, further than to state, that they average two thirds as much as a cavalry horse, and lately their charges have been much reduced in point of expense; but still the objection exists towards them, of the circumstance of the impossibility of recruiting them, on the occurrence of casualties, as they are not natives of India, and must be brought from Persia and Scind.

The management of the cattle department depends, after one general principle has been laid down for the conduct of its interior duties, upon the first preparation for the campaign, and the applying subsequently the local resources of the country in which the troops are situated or moving; and certainly north of the Kristna to Delhi there is no want of every species of cattle, adapted to all and every carriage for the movement of an army; that is to say, elephants, camels, and bullocks, according to the northern and southern position of the troops.

I am inclined in this place, as not inapplicable to a subject of this nature, to notice a remarkable animal, the Deccan Tattoo, which though small, still from its spirit, hardihood, endurance of fatigue and privation of food, docility in management, though somewhat vicious in temper, I have never witnessed his like in any country; for he bears no affinity either to the pony of the Eastern or to that of the Shetland Islands, for he is not so deep-bodied, and is more active, with a thinner skin and finer mane and tail. Of course I am understood to confine myself strictly to the utility of the animal, and as such I deem him for the carriage of every species of stores and camp equipage that can be packed in a package, or box, weighing

100lbs., two of which he will easily carry at a sharper rate than either a camel or bullock, and with equal safety; he trots well in small light vehicles, and has frequently shown a considerable degree of fleetness and bottom for his size in a race: he is generally a favourite with the younger officers of the army, and is invariably preferred by the Sepoys and their families for the transport of their baggage: his head has frequently a very blood appearance, his muzzle and nostril handsome, and his eye full and lively.

He seems to have been peculiar (at least the animal I mean) to the Mahratta armies. He was admirably adapted to the rapid and long marches of their predatory warfare, for he carried much, and moved at a quick pace; was easily maintained, as he required little grain, and a small quantity of poor forage. Whatever his size and want of beauty may be, he is not destitute of the qualities to perform long journeys and endure inclemency of weather, which might allow him to aspire to be distantly descended from the line of the Arab; but at any rate, if he be the indigenous native of the soil, as he is now generally reported to be, he certainly may rank as the blood-horse of India. How the fact may be I know not, for I have been unable to trace his pedigree, or to ascertain anything more about him than his distinctness from the larger class of horse, who either Arab or Indian have a rooted antipathy to the whole race.

Within the last few years much pains have been taken to improve this species by distributing the smaller kind of Arabs as stallions, and encouraging the natives to bring their tattoo mares to be covered: the experiment is in progress, and succeeding, as the reports state that the inhabitants prefer bringing their mares to these Arab horses.

The mode of stating the expenditure of the cattle department and of its followers is open at Bengal and Madras to the common complaint of want of clearness; for it is mixed up with other heads that have nothing to do with it, and consequently no accurate conclusion can, as to its real expense, be arrived at. If a separation of items was made, or, more strictly speaking, a simplification of accounts acted upon, this evil with others would disappear, and the requisite œconomy spring up in the place of any wastefulness of outlay, which in its present shape it is not easy to control, and appropriate its parts to any particular branch. A new arrangement would facilitate the establishment of a general and uniform plan that would regulate the mode of procuring the cattle, their proper application, and the amount of the expense and their attendants, particularly those of the draught and pack bullocks, which would not pass as they do now under different denominations, pay and treatment; which at present must in a great degree be attributed as much to the varying ideas of the persons who employ them, as to the local usages of the different provinces in which they are found. This circumstance is remarkable from the view taken of the subject in Bengal and Madras, where, with the intention no doubt of introducing an improvement in the breeds of the country, large and expensive breeding studs and farms were established,—exclusive of the annual outlay of 12 lacs at Bengal and 8 lacs at Madras for the hired cattle, kept up as a permanent establishment. This disproportion of the expense in tranquil times, as well as the practical utility of the undertaking, have I believe been very clearly manifested by the results produced at those Presidencies; for it can hardly be worth while for Government to breed cattle and camels, when the latter are numerous and cheap, and the former can be had at rupees 50 per pair in the upper provinces of Bengal, and at a very little higher rate in the Madras territories. The same object, however, has been accomplished on the western side of India, as was expected from the breeding studs; the Government there always gave the full market prices for the best cattle, and the best hiring prices for the hired cattle. As a proof of this, it is only necessary to recollect that the Guzerat cattle are always procurable, suited for artillery, with a smaller class from Malura, whose pack cattle are hardly anywhere to be surpassed, and the Guzerat are held in the highest estimation everywhere, and nowhere more so than in the northern parts of India, where their own cattle, the nagone, are excellent.

The only objection to the Guzerat cattle is, that they require more care and food than the same kind of animals from the other parts of India: and the stud bred cattle also, I am told, are always more delicate than others.

Little difficulty seems to present itself in attempting to account for the fact of a greater number of cattle and followers being allowed and kept up in Bengal than elsewhere, at a comparatively less expense; it is doubtless owing to more than one reason,—the local usages of the country do not altogether govern it, and it may partly be ascribed to the ample means that Presidency possesses, added to its being also the seat of supreme authority, which furnishes it with a surplus income that places that Government beyond the anxiety experienced by the other rulers, who are obliged closely to consult the extent of their means on every trifling occasion; while no feeling of that sort, of measuring the cost with the object required, need exist in Bengal, where the sense of public œconomy is practised on a broad scale. I do not wish this observation to convey more than its proper meaning, or anything like invidiousness; but the examination of facts when looking into the size and number of their establishments produces this conviction. The difference can also be imputed in a great measure to another source,—the cheapness of food for both men and animals; labour is forty-three per

cent. the principal articles of subsistence for natives thirty-two per cent, and grain for cattle forty-three per cent, cheaper in Bengal than on the western side of India. In any attempt at comparison therefore in this line where men and animals are both regarded and estimated, the numerical strength of men and cattle must first be insisted on as the basis on which the calculation for the wants of each Presidency are to be computed, and then the most reasonable rates obtaining in each country afterwards fixed and paid. This argument of course assumes that no cattle are to be bred at the charge of the State, which would in this first step get rid of all expensive establishments; and if hiring the requisite numbers of cattle of all kinds for a full equipment be deemed too heavy a charge, the draft cattle for a certain proportion of the artillery could be purchased, and after a certain number of years' working could be resold. Even this plan would be preferable, and fully as efficient; certainly a less wasteful one than breeding, where, exclusive of the charges for supervisors and attendants of all descriptions and feeding, the expense of the necessary buildings and offices is a point worthy of consideration; where so deep a question as that of public œconomy presents itself for inquiry.—I shall here conclude by repeating, that it would decidedly be more œconomical to hire cattle when required for military purposes, and to keep up a proportion permanently, as a precautionary measure at a few of the frontier stations, for sudden emergencies; add to which, now that we have the prospect of a confirmed state of tranquillity, and have time to look into the past as well as the present, we find, amongst other ways of supplying ourselves, that, generally speaking, the contract system gives employment to persons of moderate wealth in the country; while Government frees itself of the expense of casualties and establishments, which according to circumstances can seldom be brought to a very accurate conclusion. And by a judicious arrangement of retaining, on a moderate scale, carriage for some light stationary forces, and providing for the occurrence of unexpected calls, a considerable reduction can be brought about in this large department. It must be admitted that I have, in discussing the operation of this important question, confined myself to general observations and rules, with the examination of leading facts, without entering much into details; because the establishment of a general or uniform system would introduce of itself the minor arrangements, producing their subordinate attendants,—regularity, control, and œconomy.

I have done, it will be observed, little more than make a casual remark on the followers that necessarily belong both to the cattle and the other parts of the army, which are always considered a component part of this department, and deemed so inseparable from the cattle themselves, that an enlistment or bargain entered into for the one includes the other; the reduction in the hire of the animal therefore occasions a similar effect on the expense of the wages of his driver. We must consequently argue this question by inference, taking the second for granted when the first is settled.

But on the head of followers of another description, which is a very serious concern, I must observe, that they should be separately considered when discussing the departments to which they appertain; so that Tent Lascars, Dooley Bearers, and Biggaries are yet to be described. For instance, the dooley bearers will be noticed in the Carriage of the Sick; and the observations made on them are in a great measure, I conceive, equally applicable to the followers in some points of view of the Cattle department. I shall therefore, for brevity sake, not repeat them here, but propose a reference to them in their proper place for further explanation.

Barrack Department.

This department is so blended and mixed up in Bengal with the Engineers and their establishments, that it is difficult to ascertain the actual duties of the persons attached to it, although the scale of establishment is by no means small. The several heads of the department are sometimes termed barrack masters, at others, executive officers, including engineer, &c., and officers from the line, the whole passing under a comprehensive but indefinite denomination of department of public works. This want of distinctness must be objectionable, and is only noticed for a comparison; for if it was arranged and placed on the same footing as at Madras and Bombay, a saving of expense would not only accrue,—while it would be in accordance with the orders of the supreme Government, which forbid a building officer to judge of his own works; but by this mixed mode there is no distinction between the duties of an engineer as the scientific designer and builder, and the barrack master as a mere detail officer. This can only be rectified by the quarter-master-general's department, in Bengal, being placed on a proper footing as to its exercising a controlling power over the various branches of the service that belong to it; including the barrack line and the authority of the military board, confined within those limits that should bound its influence, divested of the business of keeping, passing, and auditing accounts.

The Bombay plan for conducting the barrack duties is on the whole preferable, as being the simplest, even more so than at Madras, and the least expensive to the State, particularly when the comfort of the soldier in India is taken into consideration, as doubtless forming the primary object at all times in any contrast on so important a question. The mode of supply of barrack

stores, as well as the furniture itself, varies under all the establishments according to the manner in which the soldier in each is treated. In Bengal he is allowed barrack furniture while receiving field rations, an indulgence quite unknown to the troops at Madras and Bombay, and arguing a kind of anomaly; for in the field, straw and not tables and benches is all that is expected. At Madras the soldier has the highest pay, and receives barrack furniture when in garrison, with chatties, mats, and a long list of et ceteras, which latter are denied in Bengal. Every description of European troops marching on the Bengal establishment are allowed 120 rupees per month per regiment for straw as bedding. But at Madras and Bombay nothing is allowed even upon any campaign; and the comparison therefore can be done only by a long detail of trifling articles, which I should imagine can only be required to guide us when engaged in regulating a general and uniform system. The furniture also differs very much at the several Presidencies: in Bengal, the cot is a rattan couch; at Madras, it consists of three planks on two low tressels, which planks are taken off and placed on two high tressels to form a dinner table; at Bombay the cot is the same as at Madras, but used for no second purpose. The bench is the same in Bengal as at Bombay, but at Madras it is formed of a single plank taken from a sleeping cot, and the table in Bengal is the same; but at Madras there is no distinct table, as I stated above: consequently the expense of this article of supply must be greater at one place than another, for at Madras the soldier actually gets nothing but a cot, which he must take to pieces to form into a dinner table and bench, both of which articles he is without during his leisure hours. In Bengal and Bombay the barrack is certainly too much crowded by a cot, a table, and two benches: by the adoption of a mode now presented to Government for a high cot, which answers the purpose of both cot and table, and two small benches, more room will be allowed in the barrack, with greater ventilation, and the men would have the four small benches for each mess during their leisure hours to sit or work upon.

This department, as comprehending the subject of buildings for European and native troops and departments under the three establishments, is not the same as to number, allotment, dimensions and denomination, though there are no reasonable grounds for this difference, since the climate is not so very dissimilar in the midland and northern provinces. The duties, habits, and convenience of all the troops are quite the same throughout India. I have witnessed and experienced it.

It appears that the European infantry in Bengal have baths, magazines, tennis-courts, compound walls for hospitals; the horse artillery and dragoons have, in addition to the above, farriers' workshops, riding-school, laboratory, and powder magazines, which do not exist at Madras and Bombay. The native troops in Bengal have hospital compound walls and separate hospitals for females; I suspect this mild name to have some affinity to the board meaning of Lock hospitals. The Commissariat have flour sheds, furniture godowns, cooper's house, elephant, camel and bullock sheds, and bullock serjeant's quarters; all departmental buildings should be the same, having reference only, as far as regards the Ordnance and Commissariat department, to the quantity of stores to be covered. The greatest number and variety in shape of building are in Bengal; and the experiments as to variety, particularly on the score of barracks and bungalows for European privates, to say nothing of sheds for camels, elephants, and bullocks, says much for comfort, but little in any other point of view.

Under the present diversity of system, the expense must unavoidably increase, when so much attention is paid to propositions from every individual, whether regimental commandant or medical officer. The spirit of innovation and the judgement to decide on what is best for the men, seem hardly to have met in the experiments that were tried; for the very persons who advocated them, admitted that they had never looked so far forward as to calculate the severe effects of men living (*as soldiers*) in *detached* bungalows, which must inevitably expose them to the effects of the sun when passing from one bungalow to another. This is easily seen when we compare the buildings themselves in their separated state; but the space for each European soldier being 163⅔ square feet in Bengal, and 88 only at Bombay, exclusive of veranda; and

A native regiment in Bengal has a Store Room of	43	by	18
Bombay	40	—	22
A Hospital in Bengal	144½	—	20
——————Bombay	96	—	22

From this statement it will be obvious that if the chief engineers of the three Presidencies had been directed to communicate with each other, something like regularity, if not uniformity, would have been at least established on so essential a subject, which like many others has been determined according to the taste of the person possessing the local influence to do it, though probably it would have been more conducive to the comfort of the soldier and productive of œconomy to the State, to have gone by a fixed and due proportion of room as on an incipient principle, and then to have subsequently arranged the detail into proper shapes; this would have at least prevented those expensive experiments in Bengal, which have swelled their expense, as well as on the Bombay side. I shall not here advert to the enormous sums that have been sunk in this line by the abandoning of barracks, from the change of stations in the removal of troops

from one position to another, but leave that to find its due equivalent either from political necessity or necessary change of a military frontier.

The description of buildings for the Ordnance and Commissariat may at any rate be fixed, leaving their dimensions to be settled according to the extent of stores to be kept in them: thus a uniformity in one line of the style, description and dimension at least, would attach to the buildings of the three armies, and put an end in some degree to that waste of public money which the existing desire of change, that almost from its frequency amounts to caprice, unavoidably gives rise to, from the repeated innovations that are recommended by commanding officers according to the taste of each, as might be exemplified in a late instance in Bengal, of the old and simple plan of ten ranges of barracks being divided into forty bungalows, increasing the expense 170,000 rupees above the old standard for cost of barracks for one regiment alone.

After an examination of the numerous documents discussing the different kinds of buildings appropriated to European troops, and the several arguments produced by the officers in that line, pointing out the advantages and defects of each style of edifice, the deduction which follows in my opinion is, that the old style of building ten ranges for a regiment of ten companies was the most œconomical, and found adequate to all requisite purposes under all the establishments; but that of late a new mode was adopted in Bengal, to give not only more room to each individual, but to divide each single range into four distinct bungalows with verandas, thus consulting the convenience of the soldier by a freer circulation of air for the preservation of his health. But this latter plan is not only more than twice as expensive, but exposes the men, and particularly the non-commissioned officers, in passing from one bungalow to another, to the effects of the sun: this mischievous effect the medical men have complained of.

It were needless to say that the two edifices alluded to, each capable of accommodating a single regiment, contain the same quantity of building materials. If the question of œconomy on this head were argued, a view of the plan of course refutes such an idea; but it does not appear that the forty-bungalow plan is intended in reality to accommodate a greater number of men, though the calculation of square feet to each man is greater by seventy-two feet; and notwithstanding the boasted improvement, the last report on it from Meerut still complains of the want of accommodation, notwithstanding distinct rooms have been superadded for dining in.

It would prove as endless as unprofitable to state the details of the length and size of barracks, in addition to what has already been done:—the proportion of room allotted to each man; the arguments used for the different modes of buildings; the advantage of additional height to the walls; the size and placing the men's cots, and if the verandas ought to be occupied; the proper mode of separating the family from the unmarried men; the inconvenience attending the doubling up of the men when the barracks are undergoing the annual repairs. These and many other topics present themselves in considering the subject; but I conceive the object to be kept in view to combine the œconomical mode of military building with due attention to the comfort and health of the soldier, is not so difficult as is imagined.

The contemplated arrangement does not appear complicated, and in reality does not turn out so when in practice in the hands of methodical men. It need only be recollected that barracks in this country are always prepared for the full strength of a regiment, which seldom or ever retains its complements for any length of time; so that with its diminished strength, the number in hospital, with the daily guards, it would not be easy to find any barrack full, much less crowded. Every man acquainted with European troops knows what a large portion of the comfort of the soldier depends upon internal regimental arrangement; and giving more room, except for specific purposes or necessities, admits of a doubt that it increases the comfort of the men. The family men only are the persons to whom it would prove of convenience for their children.

Barracks or pendals for native troops whenever erected should be on the simplest construction; but the system of hutting is the best, as it consults the feelings and prejudices of the men on the score of caste, and is generally followed under all the Presidencies: but as to the barrack or pendal plan there can exist no doubt as to its greater expense.

It will be observed that though I have not strictly confined myself to the barracks, still I have placed that class of building in the most prominent view for discussion; the other buildings appropriated to the departments must therefore be separately noticed.

As to the question of buildings being pucka or temporary,—there can be no hesitation in pronouncing, if political circumstances will admit of fixing the permanent position of troops at once, that pucka buildings are preferable, not only for the appearance which a British army should at all times uphold in the eyes of the natives, but from its stability is less liable to expense in the long run. Thatch for roofing is the coolest; but the danger of fire is a great objection, which makes tiles and flat roofs preferable. Whenever the situation of troops appears to be liable to change, it would then be more advisable to sanction only temporary buildings, as the loss sustained by frequent abandoning of cantonments is incalculable: this style of building is adapted to the uncertainty of the case, and when the salubrity or political importance of the stations had not been decided upon for a permanency, would occasion less expense to the public, and at the same time be of equal comfort to the troops. But these matters, as I observed before, should be left to the judgement of the chief engineers of the three Presidencies, who should be

informed that the buildings mentioned in the following list are only to be allowed to the troops and departments as embracing everything necessary in the shape of accommodation of the men and establishment, and every other accommodation would be deemed superfluous, and should be inadmissible.

For Dragoons.

Barracks.
Canteen.
School Room.
Cook Rooms.
Privies.
Female Privies.
Staff Serjeant's Quarters with Out Offices.
Store Rooms.
Armourer's Forge.
Guard Rooms.
Sick Horse Stables.
Female Ward with Out Offices.
Solitary Cells.
Hospital with Out Offices.

For Horse Artillery.

The same as Dragoons, with addition of Gun Shed.

For Foot Artillery.

The same as Horse Artillery, except Stabling for Sick Horses.

European Infantry.

The same as Foot Artillery, except Gun Sheds.

Native Cavalry.

Hospital with Out Offices.
Store Rooms.
Arm Rooms.
Guard Rooms.
Staff Serjeant's Quarters.
Stabling for Sick Horses.

Native Infantry and Lascars.

The same as Native Cavalry, except Stabling for Sick Horses.

Ordnance Department.

Magazines.
Artificer's Workshop.
Gun Sheds.
Dooley Sheds.
Store Rooms.
Guard Rooms.
Compound Walls.

Commissariat.

Granaries.
Store Rooms for Arrack, Provisions, Camp Equipage, and Barrack Furniture.
Guard Rooms.

Engineer Department.

Store Rooms.

Barrack Department.

Store Rooms.
Serjeant's Quarters.

Miscellaneous.

Churches, Sinking Wells, Locks Hospitals, &c., when found necessary.

The shape, dimensions, and quantity of space for each description of troops and individuals, should be determined on by Government, and subsequently never departed from.

Boat Department and Water Carriage.

When Government send officers and troops and stores by water, it is with the view of its being the cheapest and most expeditious mode of transport. But reviewing its operation generally, it is necessary to begin with Bengal, where it is practised on the most liberal scale, under the name of "Boat allowance," *as alluding to the officers*, which I shall advert to again. At present I shall confine myself to the subject as far as it relates to stores and troops generally.

When the officers go on foreign service in transports, they then receive universally a *per diem* allowance as table money, which is paid to the commander of the vessel.

In Bombay the officers going by water from one station to another on duty within the limits of the Presidency, have a specific allowance for passage money, calculated on the Commissariat rates; but passages at Madras are not required in this manner, from the circumstance of their never using water carriage.

But in cases of being obliged to send stores from Madras to the southern Mahratta country, they are sent to Vingorla as the shortest route, on the Malabar coast, by vessels going round Ceylon; for the expense over-land of transport from Madras across to the opposite shore of the Peninsula would be enormous, though the stores themselves could be more easily and cheaply supplied in every point of view from Bombay, as was invariably done to a very great extent during the late Mahratta wars to all troops from any Presidency, Bombay being the centre of almost all the movements of the three armies. I myself recollect Lord Lake receiving for his army at Bhurtpore 14 lacs of rupees from this Government; and the records here teem with proofs of the supplies made to the Madras troops even as far back as 1803. The Southern Mahratta country, the Nagpore Toree, and even the State of Hyderabad, receive stores and clothing annually from Bombay. The private supplies for Mhow, Neemuch, Nusserabad, frequently go from hence; and so could the public ones: and the Bengal officers when ordered to join their regiments in Malwa, come down to Calcutta, take shipping there for Bombay, and then proceed *viâ* Baroda and Chotadodeypoor to Mhow, as the shortest and most convenient route.

And yet the Bombay Government have been frequently told, but never by the Honourable Court, that Mhow cannot belong to them on account of its position as well as greater expense. That the first is futile is abundantly proved by facts; and the latter could be explained, if the Bengal Government would oblige the officers of their departments who make the calculations, to insert the proportions of outlay belonging to their several studs and cattle establishments, instead of stating the mere expenses that take place at the station itself. The monthly feeding of the Ordnance cattle is nothing, when compared to the expense of breeding the cattle themselves, and casualties, which have never been brought forward in the estimates of the monthly or even annual expenditure. This, like many others, appears so plain a case, that it is surprising the same mode of proceeding where the means are similar does not obtain: and in concluding our observations upon it, it must be evident that in the adoption of one rule for officers moving from one station to another, requiring water conveyance, the mode at Bombay should be resorted to, of granting full batta and passage money agreeably to the Commissariat rates, as the least objectionable and most œconomical; while it leaves Bengal on a modified and reduced scale with all its present local advantages of a rich country abounding in means for this species of transport. The transporting of stores by water will be pretty nearly the same when any uniform mode is established for that purpose.

Transport of Stores.

The mode of conducting this department arises apparently from the local position of the three Presidencies. At Bombay it is conducted by the Commissariat by contract, both the water and land carriage, if public cattle are not available to render any assistance. In Bengal the Commissariat engage carriage or freight, on the Ganges, on the moment of demand, to the nearest depôt, whence public cattle can be employed with advantage; but at Madras the sea conveyance for stores is but little in demand, and the Commissariat I believe avail themselves of the services of the public cattle, when present, for the transport of their stores over-land. Under these different modes of course it is difficult to draw any inferences, which of the plans pursued is the most expedient or œconomical: but if the Bengal and Madras armies having great and expensive establishments of cattle always in employ, with the stud and farm for their rearing, be taken into consideration, there can be no hesitation in pronouncing the Bombay plan the best, as must be evident from its simplicity, the employment it gives to the Ryots, and from the reason also, that great establishments must be expensive, as it is clear that in certain seasons of the year the cattle cannot be employed, and therefore during that time are a dead charge on the State. A comparison also that unavoidably involves the local usages and the way of applying the productions of the several countries, without reference to any definite mode of framing the means in our power into some regular plan, makes me of opinion that a contrast of this line of the service would be almost nugatory. It would be as preposterous on the score of expense for either Madras or Bombay troops to have the same kind of cattle for the carriage of their privates' tents as in Bengal, which would be elephants; as it would be in Bengal to use the Madras carriage for the same purpose, that of bullocks.

The Bombay plan is in this a medium one, of using both camels and bullocks; the former of these animals, though not bred in the British territories, are indigenous in the adjacent ones of their neighbours, and of easy acquisition. Bengal is no doubt the country for the employment of the elephant; not only because he can pass along easier from the openness of the plains, but from the circumstance of the forage (foliage of trees) being so abundant, which is necessary and natural to his thriving. This with the cheapness of grain, and low rate of wages to his attend-

ants make him preferred even to the camel; though it is equally true that the inferior kind of camels in the northern and western provinces of Bengal, known as the Rewaree breed, to carry small loads, were used in great numbers in the camps during the northern campaigns against the Mahrattas and the first Bhurtpore war. Besides, the elephant lives longer, is less liable to accidents, and is not so delicate in his constitution as the camel, and is upon the whole, taking every expense of casualties into account, the most efficient and least expensive carriage; though he does not carry a burthen from his immense size in proportion to that of the camel, as the latter does to a bullock. The proportion is nearly for the elephant two to one, and for the camel three to one. These useful animals are so expensive in their keep on the Bombay side, that they cannot be retained but for great emergencies, as they cost 100 rupees each per month keeping, and in the upper Provinces of Bengal only forty-six; nor indeed are they so well adapted to our hilly and irregular country, where the climate is dry, and the forage is both scarce and but little suited to their taste. As one proof of this reasoning, let us only revert to the practice of the native Princes when in the zenith of power, and the nobles of their Court, never using elephants but for state occasions of parade and the transport of their larger tents. And the very utmost their great powers have been known to be applied to for military purposes by the Mahratta Princes, and those south of the Godavery, in the vicinity of whose countries they abound in the province of Malabar, is to impel guns up hills, where the declivity and ruggedness of the roads would not admit of cattle being yoked to drag them up. Had it been expedient to use these animals for carrying stores of any kind, there is no doubt they would have been long since employed in the Madras army, for whose equipments the question of expense seems seldom to have been an obstacle.

Camp Equipage.

The Madras and Bombay Governments, upon a general principle of compactness and œconomy, have placed the deposit of the camp equipage of their armies for every description of troops in the Ordnance Store Department, when stationary, and in the charge of Regimental Quarter Masters only when on field service, but specially subject to the supervision of the Quarter-Master General's Department: while in Bengal the native troops retain charge of their own canvass, for which the allowance of 27 rupees per month to each regiment of cavalry, and 32 to each of native infantry, is granted; not to mention the expense of the numerous store-rooms for the native corps for that purpose, which could easily be dispensed with. The plan pursued at Madras and Bombay prevents the attendant expense of the unavoidable wear and tear of the tents while in such a distributed state.

The construction or size of the tents of the camp equipage is not the same at all the Presidencies. The native troops in Bengal have *Pauls* similar to what the Binjaries and the artisans of an army use on the march; which possess one advantage, the convenience of being easily taken to pieces, packed and carried, but is a very uncomfortable way for the men themselves. At Madras they have one- and two-poled tents with *Bamboo Coolies, their poles not being jointed:* and at Bombay a bell tent, which in every way, military and financial, is the best adapted to an army in the field, and would prove the best throughout all the establishments, with immense saving of expense. The compactness admits of it going on *one* bullock with *jointed poles*, pegs, &c. thus saving the charge for bamboo coolies*, and becoming on an emergency a very useful cover. Where a want of followers, the difficulty of moving of the usual kinds of cattle, such as camels and elephants in bad roads, close countries and passes, form serious obstacles to the travelling of those large animals, as was I believe particularly felt during the Nepaul war, all these impediments, so detrimental to the rapid or easy movement of troops, would be overcome by a proper attention to this branch of equipment, which in point of importance is certainly next to the one of provisioning troops properly; and the other Presidencies by its adoption would suffer no inconvenience. The cover for European troops is very similar under all the Presidencies, the Bengal pattern being adopted for Bombay, with some variation as to the numbers allotted, and the species of cattle used for transport, except that elephants are used in Bengal, camels at Bombay, and bullocks at Madras.

The dimensions of the camp equipage of the three armies would be better understood by taking the internal area of the tents; for instance,

For a Captain, it is	23	by 15	at Bengal.
	$19\frac{1}{6}$	by $13\frac{1}{6}$	at Madras.
	19	by 12	at Bombay.
Subaltern	14	by 14	at Bengal.
	12	by 12	at Madras.
	12	by 12	at Bombay.
Field Officer	25	by 18	at Madras.
	25	by 15	at Bombay.

* Rupees 3 annas 8 per each tent.

The Bengal one I do not know; but enough has been said I hope, on a general view of the subject, to prove that improvement is practicable; and I am led to think that much benefit would accrue by the introduction of the light compact tent used on the Bombay side for native troops, which embraces the wished-for requisites so much sought after, combining the effects of œconomy and efficiency, and the soldier-like appearance of an army when placed under canvass.

Tent Lascars.

There should be a very small regular corps of Tent Lascars kept up under all the Presidencies, and distributed for the preservation of the camp equipage in store, in proportion to the several station depôts. These numbers could always be easily regulated, and increased when required. At Bombay these people are made to repair the tents and furnish pegs and mallets. I think the classing of them preferable to the present mode, and a great improvement. In all field forces while marching, the soldiers should assist (indeed almost always do) in the pitching of their own tents, and therefore the proportion of Tent Lascars for a European regiment in Bengal, from seventy to ninety, is swelling the number of followers, which has at all times been deemed one of the greatest evils in an Indian camp. The Government of Bombay, by limiting the number and giving them full employment, and using the bell tents, which from their *jointed potes* render unnecessary the employment and expense of bamboo coolies *, occasioned a considerable diminution both of the size and expense of this species of equipment.

If the Tent Lascars are to receive clothing, I think a biennial supply would suffice; but as to pensions, I cannot admit that they are a bit more entitled to them than the dooley bearers. I therefore incline to fix the period of 20 and 30 years, entitling them to two different scales, if they are admitted to enjoy this indulgence. The work of the bearers may require less training, but it is more severe, and certainly more exposed on the score of personal danger; for I have known them dig trenches as well as carry ladders on an escalading party with the pioneers. I imagine the natives themselves conceive that we calculate the price of their services much more on the grounds of personal danger and risk than on any work or advantage we derive from the exertion either of their talents or information; and the estimation in which they themselves hold followers is certainly estimated, and in their own eyes acquires an increased value, as the affinity approaches the treatment, pay and retiring pension, of a sepoy or fighting man. I can exemplify this opinion by remarks that have been made to me at various times when contrasting the wages of followers, and even of our own servants, with the pay of the sepoy, which is so much less; and it has been frequently hinted, Make us "like the sepahe." I therefore feel induced to conclude that from every motive of policy, as well as justice, in apportioning the pay of followers, we should keep them at a distance, on the score of pay, clothing and pension, from our sepoys. Experience teaches us, that the man who is employed only temporarily without receiving the advantages of clothing and pension, must of course receive more pay than he who has a fixed income; but if he has also all the benefits of a regular enlistment, his pay should be proportionally low, because he has not only clothing and a retirement when worn out, but a permanent subsistence in the mean time, while his strength lasts, equal to that of a fighting man, without the risk of life and limb; nor is he subject to a fluctuation of wages as a common labourer, or even an artizan, compared with whose situation he becomes an enviable person.

Carriage of the Sick.

The manner of conducting this branch here and at Bengal is the same that the dooley bearers are retained by hire, while at Madras a permanent corps is kept up at a heavy expense. There can be no question that an enlisted corps upon the Madras system of clothing, pension, and every other indulgence on the footing of native troops, ought to furnish a most efficient body of dooley bearers, though in Bengal they retain large establishments with forces at apparently a much less charge: I say apparently, because the followers will do no extra work; since both these Presidencies can collect followers of every description with the greatest ease, at comparatively lower rates than under the Bombay Presidency, where wages are high from the necessaries of life being dear.

In Bengal, from immemorial usage I think more than from prejudice of caste, the followers of any particular branch of the service will not turn their hands to any other work than that they are exclusively hired for; and thus with the intention of doing justice to all parties, it will appear that the Bombay and Madras armies have an advantage in their followers over those of Bengal, from being more generally useful, though their pay is higher.

The number of dooley bearers allotted for the carriage of sick Europeans and natives bears no proportion to each other in Bengal, and under the other establishments they are calculated upon a larger scale. Madras and Bombay give about the same number of doolies to native troops; but in Bengal they allow only one to a troop or company; but for Europeans the calculation is

* Rupees 3 . 8.

the same throughout India. The care of this article of sick conveyance is at Bombay and Madras always retained in the Ordnance department. In Bengal it appears that it is placed under the care of the regiments themselves, with an allowance of one rupee each, for repairs, per month; incurring a permanent annual expense of about 24,000 rupees, exclusive of the attendant expense of regimental store-rooms and their repairs.

The shape and weight of the dooley are both objectionable, which must be evident when we consider that six bearers only are allowed to carry the sick man, his knapsack, musket and accoutrements; this simple fact alone, forces the conclusion upon one's mind, how very inadequate this power is to the moving of such a weight, not on good roads, but over rough country, for ten or fifteen miles in a day. What must we expect as the consequences of keeping sick men from four o'clock in the morning frequently till two in the afternoon, exposed to a tropical heat, and without food or refreshment; and yet it is doubtless the best conveyance we have been able to use out of the many that have been proposed for that purpose. We have no claim to it as an invention of our own, for it is nothing more than a prolongation and enlargement of the same-shaped vehicle in immemorial use amongst the natives themselves all over India.

Soldier . .	9½ stone		or 168 lbs.	The usual burden of a cooley	40lbs.
Kit . . .	1	Dooley . .	113	Six bearers	240
Musket . .	1	Ammunition	5		
Accoutrements	0½			Overplus	46lbs.
	12 stone:		286		

Our medical men, from feelings of humanity, gradually altered the original dooley, which was about feet three and a half long, with a pent-house roof depending from the bamboo on which it was slung; the length was also increased to six feet, and the roof made square, and covered with Europe canvass painted. This answered the double purpose, it is true, of a marching conveyance, and of a bed at night. The alteration, however, rendered it both heavy and cumbersome, occasioning it to travel very slowly, as the bearers are obliged to stop frequently to rest and recover themselves.

There is another and a lighter kind of litter, much used by the Portuguese in India, the introduction of which into our hospital department would prove in my opinion a great benefit. It is called by them *muncheelo:* it is, in its simplest form, a common hammock suspended from a bamboo with a cloth or canvass cover fixed on the bamboo, in the same manner that a boat's awning is. Those of the better kind are more ornamented, and have a cross stick at each side to spread the canvass; upon the whole, it is one of the lightest and cheapest conveyances for sick, and particularly wounded men. Its being so very portable and light renders it an object of the most serious consideration, where the sick of an army are to be transported; it has also another advantage, that it is not difficult of construction, and, the materials being found everywhere, is easily repaired.

I have more than once proposed a different machine for a dooley, but have been unsuccessful in making one that combined my idea of lightness and convenience. It should, however, be taken into consideration, that though the sick man ought to have his kit with him, still there is no reason that his musket, weighing fourteen pounds, and his accoutrements half as much more, should accompany him; for I presume that personal defence in a sick state is quite out of the question, and the invalid himself is utterly incapable of keeping them in a proper state for use, or even of preventing them being lost in crossing rivers, or being stolen at night.

The dooley ought to be made of lighter and less expensive materials, to answer, as it does now, both for moving and sleeping in; and the musket and accoutrements of the sick man should be placed in, and carried with, the regimental stores.

Relative to the bearers I have already given my opinion, and therefore can only urge here, that there ought to be a small permanent body of them, to be recruited as occasion might demand, with the provision of a pension at the end of a certain number of years, and grants of land in the vicinity of their native villages. This plan would insure us an active and able-bodied class of men from a caste of people who deem it an hereditary profession and livelihood, and provide our hospitals with an efficient conveyance for the sick.

There is a work on the subject of conveying the sick of an army, by an eminent French physician, who was attached to the armies under Bonaparte upwards of twenty years. In it there appears a curious similarity of plan, when it is evident no communication could have existed, that gives rise in some measure to the idea how armies similarly situated on the score of severe and continued marching should have found it expedient to adopt almost similar modes of conveyance for their sick and wounded, as seems from the description to be the case with the French in Russia and the English in India. I have been much tempted to introduce some of the ideas and observations of one who has at least experience on his side, but have refrained, from the circumstance of his work being so well known. His remarks and practice, which

though published in Europe as a kind of discovery of great benefit, appear hardly a novel system to those in this country, familiar with the extensive as well as expensive style in which troops are moved in India.

I cannot close this head without stating that the perusal of a very able Report, framed by the Medical Committee ordered by the Bombay Government to report on the state of their own service, has not furnished me with any observations relative to the carriage of the sick. I am unable, therefore, to introduce here any remarks beyond those that occur to myself: the questions that the Committee do discuss I shall notice when speaking of the Medical Department, and the mode of making supplies to it.

Cavalry Branch.

This very important arm of the service embraces many subjects so intimately connected with it, that I feel somewhat at a loss which of the heads I should first introduce that would lead to a clear and general opening of its subsequent details.

Grain, &c.—This appears, however, one of the primary points. I shall notice the quantities allowed at the several Presidencies, with the differences, and the reasons assigned for the variation of the feeds, at the different seasons of the year, to meet the effects of heat and cold.

The quantity of grain allowed the cavalry in Bengal was less than at Bombay by one pound for six months, and three pounds for the other half of the year. This may be owing to the horses having less work; but the reason alleged in Bengal is, that a larger quantity in the hot months would prove injurious, as raising the horse into too high a state of condition: the same scale is in practice at Madras, and for the same reasons no objection seems ever to have been raised on the introduction of a similar reduced ration on the Bombay side by the officers either of the European or native cavalry, on the grounds of insufficiency, the horses of the other two armies being found to thrive upon the smaller allowance.

It is equally proper probably, to carry the comparison a little further, for a comprehensive view, to mention the usage in England; than which country, I presume, there is none in the world where horses of every kind are better prepared, or more completely brought up to their work. There we shall find that a peck of oats weighing ten pounds is considered a very *full* per diem ration, though three fourths of it are generally considered sufficient; and oats certainly do not contain the same quantity of nutritive matter that either barley or grain does. In Arabia and Persia, both countries celebrated for their horses, seven pounds and a quarter weight of barley form the allowance, with chopped straw forage; except for growing colts, who have in some places on the banks of the Euphrates green clover, and green pasturage in the season. This latter circumstance, however, never can be adduced as in any way affecting the mode of feeding the horse in use or exercise, whose animal powers must be brought up by exercise, and then maintained in work on the opposite plan of hard food. The difference as to the feed of grain between the three Presidencies is at present very immaterial, except in the case of the dragoons and horse artillery in Bombay and Madras, where they receive twelve pounds weight of grain while marching, or in the field. I must confess this quantity seems hardly necessary, not only as it *exceeds the old rate*, but as in itself it is superabundant: there is hardly any horse will for a continuance eat so much.

The above-mentioned ration is detailed in the margin*, as it has lately been fixed for the Bombay cavalry, assimilating it to those of Bengal and Madras, which, stationary, was deemed quite sufficient to keep the horse in good condition, while it occasioned a reduction at Bombay of about 45,000 rupees per annum; but the greater quantity† in the field it is alleged is necessary, because the horses are larger. I have, however, never been able to ascertain for my own satisfaction, that good cavalry horses of 14: 1 hands require less food than those of 14: 2, to keep them in an equally good state of condition, though the horses for these branches in Bombay are larger by two inches than they are either at Bengal or Madras, for similar arms of the service.

It may however, with equal truth, be urged on the other side, that the horses of the household troops in England and those of the cuirassiers in France were always as a matter of course allowed a greater ration of grain and forage. But we know from experience, from the trained racer to the hack, that to increase the feed of grain is to decrease the quantity of forage: all stable-keepers who have horses for hard and continued work are well acquainted with this fact in practice, and depend entirely upon the grain and grooming. Cavalry officers while marching, and subject to bad weather, rest mainly, my experience leads me to think, upon these points, with the aid of a few mussalas or cordials, as their horses consume but little forage on these occasions.—(Vide Appendix for the statement showing the comparative expense of feeding 9,738 horses in Bengal, Bombay, and England for 365 days.)

Grass Cutters.—I shall now take up the grass-cutter plan, as one of many for foraging the cavalry. There is a variety of forage in India, besides that procured from the stalks of two

* Four months at 8lbs *per diem.*
Eight ditto at 10lbs *ditto.*

† Bengal 10lbs *per diem.* Bombay and Madras 12lbs *per diem.*

kinds of grain, and some kinds of grass: of this latter vegetable there is a considerable variety all over India, and where the horses are fed on the roots of it, under the general name of *jaullee*, as is the case with nine tenths of the cavalry in India, a very remarkable species of it is always preferred when it is procurable; it has different names in different provinces. I do not know its name in the districts composing the Madras territories, but in other parts it is called *doot*, and in Guzerat and to the northward *jinjwa*. Its way of spreading is unlike any other; it stretches out a branch, which, according to circumstances as it finds nourishment, strikes a root at a distance of three inches, and sometimes of ten and eleven, from its parent root; thus spreading all over the surface of the ground, and might, without carrying the resemblance too far, be compared to the mode the banjan tree multiplies itself. It delights in light good soil, but is seldom found in rocky or even in gravelly spots. The other mode of supplying forage is by stacking hay in the season, which is in great plenty in Guzerat, and the whole range of the western Ghats. It is now however but occasionally used, as the movements of the cavalry render a regular supply of it more than precarious, and it is only expected at fixed stations where it has always proved of the greatest convenience, as stacks of it have always been available both in the Deccan and the cantonments in Guzerat. The Madras system, which on a general principle is applicable both to marching and being stationary, has superseded the use of hay; and the plan of grass-cutters, attached as a regimental establishment, has been adopted in preference. It is a mode that has its advantages, no doubt, when it is taken into consideration that our troops are at all times liable to move, and have such an extent of country to range over; for by this means they may be said to carry their supply of forage with them, their followers, and their families, cutting up the grass and collecting it as they proceed along the line of march. They are besides of use in other ways, as they procure fuel, and sell it in the Bazar; but in this enumeration of their useful capacity, I have I am afraid exhausted the commendation due to them, as they are in other points of view an encumbrance, and in some cases a nuisance, from their habits, and an absence of moral restraint as to the means they employ to possess themselves of what they require. Their numbers too cannot be passed over as a matter of indifference: when the extent and defence of a camp are thought of, it must also strike any one accustomed to witness the conduct of followers of this, and other descriptions, during the march of an army, that they form bands of plunderers, who call for the utmost rigour to keep them from committing excesses; and they prove in many situations a burthen to the resources of a camp, which ought to be as much as possible restricted to the maintenance of the fighting men and their indispensable attendants.

Upon the whole, whatever the defects or advantages of the system may be, I rather incline to the grass-cutter one, as being better adapted to a field equipment, and as the regulations formed for it are good, accompanied by a regimental fund*. Experience however in this case, as in most others, must be alone trusted to as the best prover of any experiment, for such it is at Bombay, while we are acquainted with its effects at Madras: and if the Bombay regiments could by any precautionary measure avoid the evils objected to the grass-cutter plan, of the rapid increase of numbers in population, which is so sensibly felt, it would be divested of its faults; but how this is to be guarded against is a question evidently of difficult solution, as no remedy has as yet been proposed to arrest its progress.

Saddle Contract.

Amongst other subjects that have arisen in the course of this review, few have more seriously attracted my attention than the state of one of the largest contracts in the service as connected with the equipment of our cavalry; I allude to the mode of supplying horse appointments for that arm of the service: whatever the previous expense may have been, it will be useless to advert to it; the existing state of the service is all that can be noticed; I shall therefore confine myself to that part of it, and allude only as may be necessary to its past operation. It appears that in Bengal and Bombay the contracts for the saddles, harness, bridles, and horse appointments of the horse artillery and light cavalry (all mounted corps) are supplied by Government once in eight years, and held by officers commanding troops at one rupee per month for each set to keep them in repair. The allowance on this head at Madras is rupee 1 and 12 annas, which includes the provision of troopers' boots and cavassons, being in the first instance provided by Government and afterwards kept up by the officers, except if lost in action, by fire, or unavoidable accident; they are then replaced by Government. In such a supply as this there can be no difficulty in having one system for the three armies. The experience of many years in the Madras side furnished by the adjutant-general of that army, strongly recommended it to be continued; and the commandant is from rank and responsibility the best contractor, if any be necessary; he has better means than troop officers, particularly in native cavalry, to assist in fulfilling his contract under all circumstances that can occur. And however much I may dislike

* The forage fund at Madras, Colonel Conway informed me, became so rich, that its amount purchased Europe cloth cloaks for every trooper in the cavalry.

even the appearance of indirect pecuniary advantages, still as it must exist somewhere in ordinary times, I should prefer it benefiting him, to any subdivision of it, as connected with so important a part of the duty of a regiment's efficiency.

The expediency of placing trust and of giving advantage (where there was any) to officers at the head of corps, instead of subdividing it, is a principle which has in my mind much importance, and has been maintained by some of the most eminent men in India. Both Sir Thomas Munro and Sir Archibald Campbell expressed themselves in its favour, and there can be no doubt of their experience and judgement.

To the preceding arguments, however, the Honourable the Court objected, and took higher ground for their reasoning, by ordering the regimental commandants to be placed to supervise the acts of the troop officers as their proper sphere of action.

Whatever the result may be of these two modes, the officers in both situations have certainly done justice to their own service; and it would not, on an impartial review, on the score of œconomy be easy to decide which is the most favourable to the public interest.

Saddles, &c.—With respect to the materials forming the items of this supply, they are as various, and more so, as the systems themselves—some Europe, some country. I shall say nothing of the experiment tried of supplying the Bombay cavalry with saddles from Cawnpore, on account of the lowness of their price, which might be adduced as a fair argument of cheapness not always being œconomy. I shall therefore address myself to the main and broad principle of the cavalry in India. Situated as we are, the European manufacture is for our use preferable, from its strength and durability; the reason is evident, viz. that the main article, the leather, is properly prepared. In this country everybody knows that all persons below those possessing estates live from hand to mouth. There are no capitalists to undertake a manufactory of any extent, and the material we are speaking of requires a long preparation to make it compete with that of Europe in durability. It follows, that if the Indian be brought to anything like the same equality, it must sell at a *higher price* than it does at present, to remunerate the labourer for his time and means employed to bring it to that state of perfection. I believe that nine-tenths of the hides tanned in England are imported from foreign countries; but undergoing that superior mode of dressing which art, assisted by capital, enables the manufacturer to attain, he brings into the market an article unequalled in quality by that prepared in any other country. With these facts before us, therefore, it is evident that whatever allowance we make for ourselves on the score of partiality for our own country, we must nevertheless prefer the material for its own superiority, whether a saddle or anything else made in England, to the same kind of article manufactured in India, because the former not only works well in common use, but is to be depended upon as serviceable in the time of need, in the same light that a musket, or the powder that fills it, should be sound when required for the use of the foot-soldier or artilleryman. However much motives of œconomy ought at all times to be present to our minds, still in military equipments the best materials are always the cheapest, and should always be used; —it is the most enlightened œconomy. For very subordinate purposes it would be equally ridiculous to use what are called expensive articles.

The Indian saddle-trees are also inferior, but even those of Europe might be much improved by containing less wood and iron, and thus be lighter and less cumbersome to the horse. No comparison, I imagine, can be drawn even on this head between English saddlery, which will last out two sets of that made in India in war, and more in peace; it is in fact as well as argument a cheaper rather than a dearer article of supply.

Line Articles.

The contracts for head and heel ropes and petty stores require but a passing remark. In Bengal it is 2 rupees, at Madras 2 rupees 12 annas, and at Bombay 3 rupees, per month, per horse, besides additional allowance in Bengal for cavassons, grain, boots, &c.; 2 rupees 12 annas might be deemed a fair allowance for everything in a troop. But as a practice I believe is in some places prevalent of a sub-contract to the veterinary surgeon for country medicines and mussalas, and the supply of horse-shoes and nails is now with the troop officer, while the shoeing itself is directed by the veterinary surgeon,—if a small deduction was made from the contract allowance of 2 rupees 12 annas per horse, to enable the veterinary surgeon to supply and perform this part of the business, except such medical supplies as are of a European sort, required from the stores, it would be better to relieve the troop officers of these duties that would be better performed by the scientific attendant of the regiment, while the officer himself became the superintendent instead of the supplier.

The contract for line articles is given to officers commanding troops, and upon the same principle affords them a similar and proportionate benefit. The honourable zeal that all officers intrusted with these contracts have heretofore manifested, and the efficiency of our regiments in every respect, would seem to establish that the check and control which are vigilantly held on commanding officers of corps by the superior officers commanding brigades, divisions, and stations, affords ample security to the service.

Stables.—I shall now touch on another part of this important branch of the army, involving the effective state of the horse for military duty as to his health and condition when required to carry his rider to the field. All results on this head produced by exercise, feeding, and covering, the treatment practised in fixed stations, must effect the preparation of the main object, that of an efficient soldier with a healthy and seasoned horse. If he is unable by stable-keeping to move to the field without apprehension of contracting any distemper unavoidable from the necessary exposure of his altered state, he is then not a cavalry horse.

As to the mode of preparation in this country, there are very many opinions offered, and various conclusions have been deduced on this topic from the same premises, influenced as might be expected by the experience and indeed even private practice of individuals; their feelings have also had something to do with their suggestions. The usages of different countries have been produced and pleaded as applicable to situations otherwise quite incompatible: but as the arguments used are by persons who, from their rank and education in society, are admitted as possessing scientific as well as practical information, I shall produce and arrange them, I trust, with the same impartiality, as to persons or places, as I have at all times endeavoured to do on every occasion where conflicting sentiments make their appearance on the examination of the views of well-informed individuals on any subject they are interested about. The question is certainly more practical than scientific, though I should blush to deny the effects that a good education may have to ameliorate common usage; but the point at issue is not so much that of schools, as the learning of schools, matured by practice for the improvement of daily occurrences; it has been subjected to a diversity of grounds, and the importance of it is great from its effects on efficiency. This might authorize me to determine it without further argument, and take up œconomy, the particular object of this Report; but at present I must be permitted to dwell on the superior subject of efficiency, whether stabling for cavalry be indispensable or not, and if it militates against or preserves the condition of the horse for the more trying duties of the field. I must premise, as a preliminary caution, that as much is claimed, and with the same feeling conceded, on the head of kindness and humanity, still it is an argument mostly intended to interest our feelings; the stronger dictates of a public service, and the impossibility of compliance with such motives from the ruinous expense that it entails, makes it obvious that in military matters hardships must be received as matters of course, and that privation on the part both of man and horse is inseparable from such a line of life. All that remains to be done is to try and ward off hard pressing events, and provide against their worst effects by inuring our soldiers and their horses by a mode of treatment that will defend them against hardships, or at any rate enable them to bear up against them with strength and resolution, which in the animal can only be done by a previous preparation.

I have considered this caution called for, before we enter on the main question of stabling our cavalry horses in a climate like India, as a leading remark. The interests of the State would be obviously consulted on the score of œconomy by dispensing with stabling, which in Bengal is proved to entail a considerable expense for building and repairs, besides involving an annual loss by fire, falling down, and the abandonment of them in cases of contagious diseases; while the contrary system is free from expense, establishing greater efficiency, the horses being accustomed always to the open air are at a moment's warning fit to take the field, hardened by exposure and equal to all emergencies. By this plan those of weak constitutions would be weeded, and not prove as they now do the marching of a regiment from stables an incumbrance, falling sick from the change, which must be detrimental to the efficiency of the regiment by dismounting the rider.

The opinions of the advocates for stables, who have, with a very few exceptions, all stated that grooming, feedings, and everything necessary for the condition of a horse, can be better done in stables than out of them, are admitted as far as their experience goes: but we are not to take as incontrovertible the opinions of those who acknowledge themselves acquainted with stables only, and at the same time admit that it renders the horse delicate; still it is generally conceded by them that the loss by casualties is nearly the same with as without stabling. What conclusion is to be drawn from this?

The following return of casualties under the three Presidencies for eight years establishes facts not easily argued against. It is therefore fair to admit, that if horses with the extra and expensive system of being stabled are not more efficient for military purposes, with fewer casualties than those who have always been exposed to the weather, the arguments for stabling are upon a weak ground; for the object of stabling must be to lessen expense in casualties and to prepare the horse for the field, otherwise the system is a waste of public money.

Table of Casualties, viz.:—

	Cast.	Deaths.	Total.
Bengal	$8\frac{6}{8}$	$3\frac{5}{8}$	$12\frac{1}{8}$
Madras	$9\frac{49}{100}$	$4\frac{4}{100}$	$13\frac{62}{100}$
Bombay	$6\frac{1}{8}$	$4\frac{6}{8}$	$10\frac{7}{8}$

It appears that the generality of the veterinary surgeons allow that contagious diseases are more

easily cured in the open air, and the spreading of their destructive effects more easily checked, than in buildings: and both common knowledge and individual experience confirm the fact, that the very walls retain infection when once disease makes its appearance; while it is equally evident and admitted, from the same source of information, that confinement in buildings all the year round proves injurious to the health of the horse, engendering inflammatory complaints, as their lungs become affected* by inhaling the impure air evaporated from their urine, by which also farcy and other contagious diseases are brought on. Hence arises the practice in Bengal as avowed, that picketing the horses at night outside the stables in the open air in the hot season is frequently done. As I wish to produce every piece of information touching the subject in hand, I shall offer every detail that relates to it as connected with every establishment. I shall therefore add what may appear to show on a similar though smaller scale, which I imagine upon examination will not prove a less satisfactory proof or argument of the general question.

The cavalry at Bombay have consisted of a regiment of dragoons since 1811, horse artillery since 1812, and of light cavalry since 1816. The general average of casualties in eight years, without stables, was $10\frac{7}{8}$ per cent; the average of the dragoons for two years, without stables (1826-27 and 1827-28), was 15 per cent, and for the six preceding years, with stables, 19 per cent. But the excess in the latter instance was thought to be ascribable to an extraordinary mortality, whether epidemic or contagious, that had occurred in 1820-21, where the deaths were $16\frac{5}{6}$ per cent, in other years never exceeding $6\frac{3}{5}$ per cent. These casualties by death in the 17th dragoons at Bombay were deemed excessive in 1820-21, attributable to a mortality; but it seems equally necessary to draw one's attention to the per centage in 1826-27 in the undermentioned regiments in Bengal by casting.

The 16th lancers . . .	30 per cent . .	Meerut.
The 2nd light cavalry . .	33	Mattra.
The 5th light cavalry . .	36	Neemuch.

This statement is merely introduced to exhibit the entire state of the question. At the other Presidencies no per centage for casting approaches this number, except in the solitary instance of the Madras cavalry returning from Ava, and even that does not exceed 19 per cent.

The condition and treatment of cavalry horses, and of horses bred and trained for the turf† or the chase, are so different that persons separately engaged in either way are no correct judges of the other; and their opinions ought to have no weight in the present discussion; nor should persons whose experience has not been gained by long service in the field have any effect. The "hard-working order" implies a capacity to bear the exposure and fatigues of protracted campaigns; and to be kept in condition by care and good grooming means more than the jockey's good condition, which requires a stable to continue it,—it is however attainable; while on the other hand there are the opinions only of the Bengal officers and veterinary surgeons, who admit that they have little or no experience of the field, which are founded on *partial* experience or *interrupted experiments*, that it is unattainable. The difference between the two systems was by the same account strongly contrasted by the sufferings of the 6th Bengal light cavalry, when without stables at Nagpoore, and of the Madras cavalry, which was subject to no unusual losses, though uncovered; while the officer commanding the regiment of Bengal cavalry reported that his losses amounted to thirty and forty horses per month.

The officer in charge of the hanaper stud gave it as his decided opinion that stables were to be preferred, and urged that as the colts from that stud were well brought up in stables, they should be continued to be covered after leaving that establishment. The simple deduction therefore from this reasoning is, if such it can be called, that it assumes results from premises quite inapplicable to the object desired, that stud horses for the cavalry must never be uncovered; and consequently, in a military point of view, become inapplicable to military service, for which they are expressly bred at an immense expense.

These reasons, and the admission on the part of those who advanced them, that they hardly any of them had ever seen service, produces the conviction of the inexpediency of keeping horses in stables, and satisfies one that no sufficient trial of the opposite system has yet been made in Bengal.

Chargers to Officers.

Chargers to officers are furnished to the officers at the Presidencies on the same principle and in the same manner; the only difference apparent is that of price. In Bengal they are allowed to be taken at the lowest rates, from three hundred and fifty to three hundred and sixty-three rupees: allow these are not the prices at which it is possible that the animals can be reared at the stud, nor the market price of the Commissariat for the troopers' horses, which is five hundred rupees. I shall pass no comment on this mode; it is clearly an indulgence. At the other Presidencies the Governments take the precaution of guarding against a loss of this

* Vet. Surg. Body Guard.

† Mil. Hin. Com. Rep.

kind, which they cover by fixing the prices agreeably to the amounts paid to the contractors for the horses, whether for the dragoons or native cavalry. At Bombay it is rupees 550, and at Madras I believe it is even rupees 600.

Remount.

The system now adopted at Bombay to supply the remount for the whole of the horse artillery and cavalry on the spot by the commanding officers themselves, will certainly be the most œconomical way to Government, holding out the prospect of proving the readiest mode of obtaining the remount, and is, from the favourableness of our position in relation to the foreign supply, as well as the facilities of breeding in our provinces. Bombay has been, and must continue to be, the entrepôt from many countries for the sale of horses; it must also be the place of reception and examination, from its central position, for the remount of nearly one half in numbers of the whole of the cavalry belonging to the eastern side of India: but of this I shall speak in its proper place in the course of this Report.

It is evident that if unexceptionable horses can be purchased on the spot by this plan, even at the rates fixed, a better plan, from its simplicity, could not have been devised for recruiting the remount, and might I think be adopted in Bengal, which prevails there in a partial degree by regimental committees, and would effect a great saving owing to the facilities afforded that army of providing horses in their own territories, as well as from the countries in their vicinity, both from the northward and westward; while it would be impracticable with the Madras Presidency, which have no resources within their own provinces, and must, as they hitherto have done, be dependent on the Bombay side, or take advantage of batches of horses that annually proceed to the southward, for the supply for their cavalry. This must make their expenses on this head very heavy, notwithstanding their horses, as well as those of the Bengal army, are of a lower standard than those taken at Bombay.

The necessity of this greater height is not quite so evident; as in the late wars the Bombay cavalry standard was until very lately the same as that of the other Presidencies, and the horses purchased at from 50 to 150 rupees less each than we are now paying, which at an average rose to 10 per cent, amounting to 25,000 rupees per annum, occasioned by insisting upon a taller horse.

The standard for the horses in Bengal and Madras is from fourteen hands one inch for dragoons and horse artillery, and fourteen hands for native cavalry; the prices for them are from 450 to 500 rupees in Bengal, and from 500 to 600 at Madras; but on the Bombay side the standard for native cavalry alone is fourteen hands one inch, and for dragoons and horse artillery fourteen hands three inches; which is so material a difference, and renders the horse purchased in Bengal far cheaper; the standard for the native cavalry at Bombay being the same as for the dragoons and horse artillery in Bengal, thus accounting for the great difference of price, the size of course creating the rise in value. Relative to the remount for the cavalry of Bombay Presidency, the Honourable the Governor minuted the following opinions:—

"The superintendent of the stud has been empowered to purchase a certain number of young horses at fairs for the encouragement of breeders, and these might be sent by him to regiments that required or were likely to require them. They should not be subject to any committee, but taken into use, and a very short experiment would prove whether this casual and limited source of supply required any modification or should be wholly abandoned.

"I am aware of the objections that may be urged to the measure recommended: they are however in my opinion so greatly overbalanced by its advantages, that I cannot doubt the policy of its immediate adoption; but its merits must be tried with exclusive reference to the Presidency of Bombay, which, as the great mart for Gulph and northern horses, and having subject to its rule those provinces of the Deccan which have long been the most famous for a superior breed of horses, and the country of Kattyawar, is altogether differently situated from either Madras or Bengal; and the question must not therefore be judged by any comparison with the systems pursued under these Governments.

"The first advantage will be the saving of expense,—this will arise in many ways; say (which is improbable) that horses continue at their present price, Government will save agency, Commissariat establishment, keep of horses, even after committees have passed them at Commissariat stables, till opportunities offer of sending them to corps, charges for their equipment, feed on the march, hazard from accident, and the greater hazard of rejection by regimental committees, and sale by auction for little or nothing, when lame or in bad condition, perhaps from want of care on the journey.

"There are no advantages derived from our trade with the Gulph of Persia that balance the evils that attend our making the whole or greater part of our purchases from Persia, Turkey, and Arabia. The vast sums paid to these countries for our remount are no benefit to India, and many events may occur to stop the supply from these countries. The export of horses may be prohibited, our amicable intercourse may be interrupted, and we may discover too late the deep error we have committed in neglecting our own resources in the essential branch of

military efficiency. There is another reason for this change, which in my mind has a weight that supersedes all objections that can be urged. The perusal of records, the recent reports of the two different collectors, and my personal observation and communication with the natives of provinces which I have recently visited, quite satisfy me that we must by every means in our power endeavour to prevent that complete poverty which, from the want of demand of every article, except grain for animal subsistence, is becoming general among the inhabitants of many of our finest provinces.

"No emergency of service is likely to occur; but if it did, the advantages of this Presidency are so great in this particular branch of military equipment, that it is not possible any wants could arise that could not be supplied in a month. Of this fact I can speak from my own experience with perfect confidence."

It can hardly, from what has preceded, be required in this place that a minute comparison should be drawn between the different kinds of horses used at the three Presidencies, which might be supposed in a great measure to be governed by local circumstances, the breeds being, as might be expected, various, over such an immense extent of dominion, besides the importations from other countries; but from an insight into the subject we are soon convinced that this is not as we expected. And however curious the fact may be, that the Bombay Presidency with more limited pecuniary means has either by its care and vigilance, aided by some fortunate circumstances of position and the habits of the natives of the soil being engaged from necessity and natural inclination in rearing horses, chosen the better mode of recruiting the cattle of its mounted corps, by adhering as much as circumstances would allow to one breed, decidedly the finest for cavalry purposes,—I mean the Kattiawar horse. And as political events and changes affected the condition of that country, and diminished its produce in number, from the necessity there was of restraining the inhabitants and breeders in their former lawless and predatory habits, who depended upon the blood and fleetness of their horses for success in their expeditions, —the Government early perceived the effects of this altered state of things; and however beneficial in other respects it might be, still it was evident it was likely to lead to a total extinction of this once numerous and valuable class of animals. They adopted a remedy to meet the apprehended failure, and consequently in 1811 made arrangements to procure horses from the northern parts of Persia, to be purchased by Captain Lindsay, whose opportunities of obtaining them of the best kind could be equalled by no ability or exertion on the part of any contractor or common supplier; as that officer, from the high estimation he was held in by Prince Abbes Mirza, the heir to the Persian throne, had permission not only to purchase in any part of the country, but was even permitted to take horses out of the Prince's own stud and stables; —not to add that his situation at the Court and his intimacy with the nobles, whose breeding studs he had access to, and whose agents employed in the surrounding countries of Khorasson, and the banks of the Oxees, and the Tartarian hordes, he knew, afforded him those means of procuring the best produce of those countries at reasonable prices. His horses to this day are spoken of in India as the best ever furnished,—the horse artillery and dragoons. As a proof that I am not attributing too much to the influence of personal character, I can easily allude to the subsequent periods when this agency devolved on others without these personal connections, in which the experiment was continued to keep up the supply of these fine animals under several gentlemen, fully qualified from their judgement and information to execute such a service. Two of them had travelled previously over the greater part of Persia, and all were excellent judges of horses; but the rejection of those they sent down in point of numbers was so great, as to place the operation of the experiment in its true light, and to induce the Government to withdraw the agency on the score of expense, and depend entirely upon their former internal resources and the casual market, which by this time became more abundantly supplied from the Persian Gulph than ever, owing principally to the increased demand for horses for the newly raised regiments and horse artillery, and also from the residence of the Madras agent, a Commissariat officer, purchasing for the cavalry of that Presidency. His purchases were both extensive and high-priced, though his standard did not exceed that established for the Bombay establishment.

Stud.

The studs and farms of the three Presidencies appear naturally to suggest themselves as component parts of this head of examination, not only from their utility, but tendency to produce superior horses for our cavalry; with the effect they must produce in being in possession of finer dams and sires, to improve the lower breeds of the country. Expense at the commencement of the establishment, from a laudable feeling for improvement, was disregarded, to create a race that would answer every purpose, both public and private, that would ultimately supersede the necessity of such establishments, and repay by a general benefit, by ultimately throwing the business into its natural channel of private individuals and country breeders, who having once reaped the advantage of such encouragement, and profiting by the prices of a good market for the sale of their produce, would gradually provide themselves with the means of continuing the race, and of procuring good food and proper attendance for the foals.

The Bengal stud has been established near thirty years, and has proved itself inadequate to an out-turn of a remount, equal to half the number required by the cavalry on the Bengal side alone. In point of excellence, it is singular to observe that most of the horses for the horse-artillery and dragoons are still purchased from the native dealers;—this fact speaks volumes as to the success of this establishment bearing any proportion to its expense.

In allusion to studs in general, it appears no doubt to be an object of much importance to have such a capital military resource within our own territories, both as of great political magnitude, as well as one of a financial nature; but I very much question if the end in either case has been attained in Bengal, though at such an enormous expense; at Madras it has completely failed.

The efficiency is doubtful, and the œconomy also; the small number of horses furnished the horse-artillery and dragoons prove this, as is evident by the continuance of the experiment, which, if it was ever to have succeeded, ought to have done so long since.

To allow the question its full scope, there is one important object probably gained, that of introducing and diffusing in the upper provinces of India a good breed of horses; at the same time it is quite evident we have discouraged that commercial enterprise of the native merchants, by keeping up these expensive establishments, which they could not compete with, while the price of the horse was consequently raised on ourselves and breeders, whom it would be more beneficial to the State to have encouraged, by furnishing stallions in the first instance, and afterwards purchasing their produce.

My inquiries lead me to believe, that eagerness to enter into this trade is sufficiently apparent from the merchants who annually travel down with horses from Khorassan, Candahar, Lahore and Cubul to the northern fairs, and afterwards extend their journey to the lower provinces as far south as Poma. This surely is no proof of a want of enterprise on the part of the breeders and dealers. I trust, however, that it is obvious that our wishes as to breeding could be effected at a less expense than the books of the Government exhibit. This would not be the only advantage to Government, which would be relieved of a monstrous expense, as our own subjects would benefit in every point of view by the increase of a better kind of this useful animal.

The Bengal stud, from its first institution as a great public resource, and taking the losses as they are called, which are in fact the absolute sum annually sunk after every credit is taken for every kind of supply made for the remount of the cavalry in Bengal, shows that the remount of the cavalry cost the Government about 1000 rupees each; while it appears that the Commissariat purchase, in the country markets for the horse-artillery and dragoons, at 450 and 500 rupees per horse. It is still more remarkable, on the score of efficiency, that the horse-artillery, which is the most difficult arm of the service to provide for, as they require the double quality of activity conjoined with strength in their horses, that is to say blood and bone, received in eight years a smaller number from the stud, which is expected from its means to produce the best cattle, than the other mounted corps; its casualties during that period were replaced by the Commissariat department from the country merchants. The out-turns and other expenses of the stud lead us to conclude that when that establishment may become capable of furnishing the necessary number of horses for the remount of the cavalry of Bengal alone (about 1035 * horses *per annum*), that each horse will cost from 1500 to 2000 rupees.

I can safely assert that in the upper provinces of Hindoostan, from three to four thousand horses for cavalry purposes are annually procurable at the Bengal rates †; nor do I in the slightest degree allude to the necessity of taking a more inferior class of animal for the Bengal cavalry than what is in use at this moment. The statement given in by the Adjutant-general in Bengal of the number of horses furnished for every branch of the service from the various sources of supply, exhibits a singular fact, that in eight years there were only 26 stud-bred horses fit for the horse-artillery, while the Commissariat purchased 1754 for that corps from the dealers; and during the same period the stud produced 2296 horses that were only fit for the native cavalry. It appears by the same return that the stud furnished from 1820 to 1828 as follows:

For horse-artillery and dragoons	460
Horses purchased from dealers for ditto for eight years	1,869
Furnished for native cavalry	2,296
Purchased from dealers, ditto	3,375

These facts, I should conceive, bring us to the conclusion, that the horses brought into the market by the dealers are taken even in preference for the horse-artillery and dragoons to those bred at the stud; for it is shown that for seven years the horse-artillery received no horses from the stud at all, but got their remount entirely during a time of peace from the Commissariat, that is to say the country dealers, at the rate of from 77 to 534 horses *per annum*.

I shall only add, that from the estimation of expense made by the late Bengal Auditor-gene-

* Col. Fagan's return.

† Rupees 450 . 500.

ral*, it could not have on an average from its institution have sunk less than five lacs *per annum*; and that when brought to the most favourable point, when its out-turns were greatest, it left in 1827—28 a dead loss of upwards of two lacs and a half, after being established upwards of 26 years. This calculation is made after great reductions had been previously effected in every branch of this establishment, exclusive of the expense of the buildings and average annual repairs, equal alone, without any interest, to the purchase of about 100 horses (at Bengal rates) *per annum*. Admitting therefore, as a fair argument, that these sums only have been annually sunk from the first establishment of this institution, we arrive at the conclusion, that, after the outlay of near one million and a quarter sterling, the original anticipation, of its proving the source from which the Bengal cavalry were to be mounted, and of superseding all the lower caste of horses, by promoting and disseminating a better breed, has not been fulfilled.

And whatever generally the advantages of an institution of this kind may be, and however it has been a favourite object with all the Governments in this country, it has, notwithstanding the lavish means and trouble employed upon it, produced disappointment, not only in Bengal, with a like failure of a similar establishment at Ganjam, on the Madras side, upon a scale, I have reason to conclude, upon the remains of the extensive ruins of numerous buildings I witnessed at that station now abandoned, and the quantity of land occupied for that purpose, are proofs that go far to establish one of two, if not both facts, that the thing was either ill managed, or that these countries, particularly to the south, are not congenial to the breeding of animals of that description. It would be superfluous to add any thing on the head of the past expense of the stud, and every thing relative to it at Madras, as it has long since been abandoned; our object at present, in a financial point of view, ought to regard only existing establishments, whose charges will bear reduction, while the duties are efficiently performed. We can only therefore profit by the fruits of the past to teach us to guard against repeating experiments that have been tried and failed under the most able hands, aided by the amplest means, and the best intentions.

As a conclusion, I shall add a short account of the mode employed on the Bombay Presidency, to accomplish a similar object. It will be seen in the outset, that though the object be the same, neither the means employed nor the management for attaining it are at all similar. No expensive buildings are first erected, no large and numerous establishments engaged, no superintendants with high salaries; but every thing of the kind, where any of them are necessary, is calculated and executed on the smallest scale, adapted to a steady gradual growth of the means available for such an undertaking.

There is one superintendant with a salary of 600 rupees *per mensem*; and though there are a number of other public officers engaged in the forwarding of the main operation of the business, still none of them receive pay or allowances, but conduct the duties connected with this line as a part of their own, being generally collectors of districts.

The number of mares of from 50 to 60 of different breeds, are English, Arab, Kattiawar, Maharatta, Bhiematery, Mhaun-Gunga, Persian, but no Kandahar, or a Cabul. Why these two kinds are excluded is explained in its proper place, where the discussion of the several kinds of horses best adapted to the cavalry are enumerated: here it is only necessary to observe upon what relates to the system now in practice, for the improvement of the breeds in the provinces equally belonging to our allies as to ourselves.

The stallions are sixty-four in number, and are at present of the above-mentioned races, distributed, under the care of the collectors, in such central positions as make it most convenient for the proprietors to bring their mares at the proper season. The mares, the property of Government, are alone under the charge of the superintendant, whose principal duty consists whilst travelling over the whole country, and visiting every native chief and proprietor, to spread a wish amongst the people carefully to attend to the improvement of the breed, by choosing the best stallions for their mares, and examining in his circuits that the people have due attention paid to all their applications; and further, to excite and keep up an emulation for the purposes of diffusing over the country a better and more numerous race.

With this view, annual fairs for shows of the produce have been established in convenient spots, the proprietors of the best foals receiving rewards in medals, gold and silver bangles, sums of money. They are then at liberty to dispose of their foals to the best advantage, or letting Government have them at a stated price. In 1827 plates were given by the Government at the several race-grounds on this establishment, for which country-bred horses only were permitted to start.

Annual committees of officers civil and military report the state, appearance, and performance of the cattle exhibited at these fairs, distribute the prizes, and mention what progress has been made since the last season; entering minutely into details. The last Report afforded every reasonable prospect of success in this moderate but valuable branch of public resource; and as the native chiefs themselves have embarked in a pursuit so congenial to their own feelings and habits, exhibiting with exultation the several parts of their studs, we may, without any feeling

* Col. Imback.

of apprehension, look forward to the ultimate result of an annual increase of this establishment; for it appears by the last Report by the superintendant of the stud, that more than nine hundred Deccany mares, the property of native breeders, had been covered this season by English and Arabian stallions in different parts of the country; and these breeders as well as the chiefs are anxious to purchase at the annual sales the produce, which answers the double object of saving the expense of establishment, and diffusing over the country colts and fillies from the best stock. It will besides in some provinces revive the former breeds, will gradually render us independent of those foreign supplies for the remounting of our cavalry; that we are at present wholly indebted to the repetition of such a natural and probable calamity, as the famine that occurred a year or two since in that part of Arabia, the low country near Bushire, that furnishes so large a number of horses, or the continuance of internal commotion in Persia, or in the province of Cheab and the country subject to Bagdad, would not only reduce us to great straits, but almost dry up the sources from whence we, and all the Madras establishment in particular, derive such extensive remounts.

Horses.

I do not conceive I am exceeding the bounds of this Report when I request to offer a few remarks on the several kinds of horses found in the cavalry of the three Presidencies. As far as my knowledge of the subject enables me to enumerate them, there are two kinds of the Arab, the Persian, the Tookoman, Herat, Cubul, Kandhar, Kattewar, those reared on the banks of the Bheema, and Mungunga. These are the principal stocks, but their branches are numerous, and would add little information in a detailed description. Those bred at the studs in Bengal form also a great variety, being descended from a number of different stocks, including the English and the half-bred Spanish horse from the Cape of Good Hope; but they have been so crossed with each other, that they now nearly form, not a separate species, but a separate class or family.

The Arab is so well known as a genuine stock, that I almost feel it a trite subject to do more than name him, for fear it should be superfluous; but it may be requisite to add, that when there are any of his progeny found, or distantly descended from him, there is always something peculiar about them, as is remarkable in one out of many instances, the Spanish horse, when first known in England under the name of the Gennett.

The Arab however is himself quite an individual; and however great his excellence and symmetry, he is certainly not so well suited for cavalry purposes as might be imagined; his temperament and want of size make him less adapted to the ranks than larger and coarser horses.

The largest animal of this kind is the Abyssinian or Dongola horse; they have been known frequently to be upwards of fifteen hands high, and pass in Bombay under the name of the Mocha horse. The next is the Egyptian; they are a larger and generally a longer animal than what we usually see in India, brought from Arabia. I have seen hundreds of them; these two latter kinds, and particularly the Egyptian, are those which are exhibited in Constantinople as Arabians. The Koordish horse never could be mistaken for them, though the Syrian, being one branch of the main stock himself, may easily be so.

The light elegant Barb, which was the sire of the Andalusian race, is completely the representative of our most pure blood, the Nujdee, with a less flat knee.

This latter beautiful creature has been much bred from during the last thirty years, and many experiments have been made of using him both in the cavalry and even horse artillery, and of adding size to his blood. Success has no doubt attended these efforts to improve him, to a certain degree; height has been given to his original stature (14 hands), but there is a deficiency of proportional breadth, so that we now get a horse two inches taller, it is true, with a longer stride and a better racer; but we must look for the progeny of this remove from the original, to be crossed with a mare of less blood, if we intend him for the every-day work of the cavalry. This could be effected if we had any influence in the countries where they are to be found; for instance, the size and bone of the Koord and the Choab mares would effect much. The Imam of Muscat has done more for the encouragement of this important object than is generally known. He has a great number of the largest and most beautiful mares, from which he breeds, while he is ever ready to pay a thousand and twelve hundred Spanish dollars, that is rupees 2,200 and 2,640, for a colt under three years old, such as his agents approve of. There are two things however to be observed in regard to the horses he has bred, that may be considered defects; they are generally very hollow-backed, and of a soft constitution. They are, however, almost always very large; and the two animals, a horse and a mare, sent to England to His Majesty by Sir John Malcolm, were the finest specimens of their species; and the mare in particular was quite beautiful, possessing what I had never seen before in any Arab in any country, great breadth.

These fine horses derived from the best sources, as I observed before in another place, are now distributed all over the Bombay territories for stud purposes.

The real Toorkoman is well calculated for the horse artillery and dragoons, for he has the counterpoising bulk from his size for harness, and a sufficiency of blood to give him activity and

bottom for the endurance of fatigue; he has also a particularly good light forehand, which besides its excellence is a great beauty in a charger. He is so highly esteemed in his own country, and so high priced, that we should never have had any number of them here, had it not been, as I related before, for Captain Lindsay's peculiar situation with the Persian Prince and Nobles.

The Herat horse is a fine animal, and closely allied to the Toorkoman, as might be expected from the vicinity of his birth-place in Khorassan to the Tartar hordes: owing to the mode in which he enters India he almost always passes under the name of either the Kondahar or Cabul, as the same merchants who bring down the two last-named kinds, and travel the same road, purchase the Herat horse also; and as strict inquiries have never been made as to the existing distinction, the dealers are content to let them pass under these denominations, as they generally get a better price for them. There are a very few of these horses in the Bengal cavalry, and those that at all come south are generally purchased for the Madras troops, mixed with the real Kondahar and Cabul, owing it would seem to the accidental circumstance of the dealers being the same, as well as the route they travel into India being on its western side across the branches of the Indus. The trade for them is carried on by the natives of Scind, who either go themselves to Herat for these horses or send agents, and making a general collection or assembly at Hyderabad in Scind, and a few towns adjacent, then proceed to India in bodies or troops.

But as the Herat horse is in company with others of less blood and appearance than himself, he shows to greater advantage, and therefore when tried or put to work his figure and activity make him called an excellent or best kind of Kondahar. His qualities have been described by analogy when speaking of the Toorkoman, and therefore require no repetition now, particularly to those who are judges, to whom he is easily distinguishable from the animals he is always associated with, for he has a lighter head, neck, tail, and hind quarters, with a shorter back. There is also another mark which is more generally understood and acted on by less discerning persons. When of the better class, he is always to be recognised by a brand on the haunch, bearing the mark of the stable in which he was brought up; as the Princes and Nobles of Khorassan, who generally have extensive breeding studs, almost always put their mark on their colts. The Kondahar and Cabul horses are a coarser and more vulgar species of the Herat and Tartar horse, their tails, hind quarters, neck and head are large and heavy, their backs long, with a thick skin; so that when they are put through the manége, or lounge, they often give way in the back sinews in the exercise to supple them for the cavalry: they are also very subject to chest foundering when put into harness. They are seen to best advantage when engaged in a procession on state occasions, highly caparisoned; their height, length, and stately gait suit well with such exhibitions.

There are some other kinds of foreign horses that I could introduce an account of; but as they are not employed in our cavalry I omit any mention of them, as unconnected with the main subject under discussion.

The Kattewar, as a native of our own dominions, next claims our notice as the chief of Indian horses, and certainly is a distinct race, possessing every quality requisite for a cavalry horse; and is another remarkable instance of the effects, however distantly existing, of an Arabian descent. He is light, active, compact, breaks well, and is capable of enduring fatigue to a great degree. Good grooming, with a sufficiency of the common grain of the country, will always keep him in condition for work; his spirit is untameable; generally speaking he is too vicious for the common saddle; he can walk on his hind legs for some yards together, with a full accoutred dragoon on his back, but is not accustomed nor taught to make those bounds (the of the old school) that the Mahrattas are so fond of; but in the ranks he is comparatively quiet and very amenable to discipline; his height, strength, and vivacity make him preferred for all cavalry purposes.

The caste and qualities of the Kattewar make him stand alone amongst the numerous breeds of India; he has been, and is still, sought after at a high price in every part of India. I naturally expressed my regret previously, that this valuable class should have declined so much in numbers, as to make us apprehensive that it would in a few years more become extinct.

Probably, while speaking of his qualities, it might not be intrusive to give a slight sketch of the master who rears him.—The political causes that acted so powerfully to produce the change that reduced these lawless and active freebooters to order, I have already explained. The inhabitants of that peninsula are mostly Hindoos, and are all cultivators and shepherds; and previously to the English getting the paramount rule, they used immediately after the ceasing of the rains to put their horses through a regular course of training, and then at appointed places to assemble in troops and set out with a Bajaree cake and some pills of opium, generally towards the banks of the Mhye river and the adjacent countries. Their own usual remark, descriptive of the length and continuance of these rides, was, that the first stream they watered their mares in was the Mhye*.

Having plundered a village, they instantly set off home to secure their booty. Their own

* From 40 to 60 miles.

country was at the same time equally subject to the ravages of the Khoosars, who crossed the Runn from Cutch and Scind for the cattle in Kattewar; so that this constant state of alarm and warfare, aggressive and regressive, within and without their own country, led to the adoption of singular customs connected with the protection of their persons and property. Their villages were always surrounded with a ditch and a thick high milk-bush hedge, which is impenetrable to anything but cannon and musketry; there is only one entrance, and that is secured by a gate covered with dry thorny bushes. In the village there is a tower of rude materials, at the top of which, from sunrise to sunset, a person is constantly on the look out: the moment he descries the approach of horsemen he makes a particular cry, the meaning of which is even understood by the cattle grazing, who instantly on hearing it set off at a full gallop towards the gate of their own village. The circumstance also of abstaining for great intervals from food, rendered necessary in the time occupied by their long and fatiguing predatory journeys, made the use of opium indispensable, which had taken such strong hold that it still continues to be a universal custom in that province, even after the original cause has ceased, to demand its tranquillizing effects against the pains of hunger.

Their horses thus carefully bred and educted for a particular purpose, always proved their superiority wherever they went; but no prospect of gain could prevail with these people to bring their colts for sale to any particular person or spot; they would attend no fair or market, but must have them purchased at their own doors. Every inducement has been held out to them to attend at places at stated periods, where prizes would be given for the best colts; but custom and prejudice overcome the prospect of gain, though they can now no longer procure anything by plunder.

The foals are not let loose on grass lands, but brought up in their villages and houses; and this race of horse is so highly prized in the north of India, that Colonel Skinner, a person of the greatest experience and information on the subject of horses, who is also a very extensive breeder, has gone to a considerable expense to obtain and establish a breed of them. He has succeeded to a certain degree, from the specimens he showed me; but they all had a defect, which I remarked and he admitted, urging at the same time what I had previously observed, that it was also common with the stud-bred horses of every kind,—a small ill-shaped hoof.

There are many other curious particulars relative to this country, its history, productions, and antiquities, that are deeply interesting to the intelligent traveller of every turn of mind, from the deep searching geologist to the superficial admirer of natural scenery; but as I conceive these particulars foreign to the general tenour of this Report, I refrain from doing more than just alluding to them and other topics of equal interest. This is also the country in which the unnatural practice of infanticide was so prevalent amongst the higher classes, springing from a feeling of delicacy and pride.

The horses produced on the rivers Blima and Maungunga are improved breeds on the native mares of the Deccan, by the cross with the Arab. The studs at many places on the streams were much encouraged during the late Peuhwah's reign, and their produce used during that period to be sent to the north of India, where they, the mares in particular, sold well, under the general name of Deccanee; but the devastation of war put a stop to the increase of their numbers, from the general confusion that took place. But since the lapse of the last few years, every exertion has been made by our own Government, and encouragement held out for a revisal and re-establishment of a breed of horses, that with the care and attention that are given to the subject, promise to furnish us with numbers of an animal well suited for our cavalry. The common Mahratta horse is seldom, except when of the better kind, equal to the work of the ranks, from deficiency both of height and strength, though he is not wanting in the other qualities of hardihood and activity.

It is not the least remarkable part of this subject, that a coincidence of treatment on the score of rearing the foals of the blood-horse exist in most of the countries that produce them. They are generally brought up by hand, and seldom allowed to be in pasturage, and in that case they are always handled at an early age. Pasturage can only be beneficial in cool climates like those of Europe, some parts of Tartary, and Persia; but has proved hurtful in more southern countries, though many degrees to the north of the tropics, from the effects of heat and the injury induced by the coat of the animal getting full of dust. This latter objection was urged to me when in Bengal in 1822, on seeing some of the Government studs in that quarter.

It is somewhat singular also, that a short removal of distance sometimes makes the greatest difference in the constitution of the horse; and the different kinds in India suggest this observation, which must have been evident to others as well as myself; and I merely state the facts as suggested by practical knowledge, leaving the deeper question of natural history to the examination and decision of those who have made it their study.

It is admitted in Bengal by the breeders and some veterinary surgeons, that the native horse within the British provinces, and even those produced at the Government studs, are less capable of undergoing fatigue and privation than the thorough bred English and Arabian. My reason for stating this position is, that I imagine it will be obvious to those of long experience and extensive knowledge of different countries, that it has been generally found that low flat rich soils are ill adapted to breed a strong hardy race, though those that they do pro-

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duce are of the largest size and most bulky shape, with heaviness of movement: but they are comparatively of a soft constitution; and though possessed of great powers for any short exertion of strength, they are unequal to a protracted effort, and sink under any unusual work and privation, for instance, the horses from the Netherlands, Lancashire and Lincolnshire, the rich provinces of Bengal and Guzerat in the western side of India; and yet in the immediate vicinity of these countries some of the finest animals are bred, capable of any work and any endurance. I might even carry the argument still further, into Persia and Arabia itself, where the colt of a rich district is never so highly prized as the one born in the desert, or bred on the grass of the elevated pasture. Nor am I aware of any striking deviation from this rule, except the Neapolitan horse, used in a low country, which has every mark of figure, size, courage and activity to prove his direct descent from the Barb: but this animal is not brought up in marshes, but in the plains of a hilly country. The same remark holds good when descending in the scale of animal life on the score of great distinctions; as relating to other animals, the sheep of Europe and the bullocks of Guzerat, the latter differing from those of Malwa and adjacent countries, are a confirmation of this opinion.

Part II.

Engineer Corps and Department.

If the construction and repairs of buildings under the three establishments were conducted on contract, as in most cases they might be, the saving would be very considerable; as a very small establishment would then be required by the engineer officers at each station of the army, who superintend the erection of public works. It is a known fact, that this mode on its introduction at Madras lowered the price of building materials twenty-four per cent. It is also under trial at Bombay with apparent great advantage, and an immediate reduction appears practicable in Bengal. If a classification of the stations for engineers, and the executive or superintending officer in a division was to adopt the contract plan, I do not perceive any serious objection to its working well; making it embrace at the same time moderate distances for action for every officer, and extending the range of the districts sufficiently without being too wide. This I think is to be preferred to the existing mode, which comprehends very unequal distances, which must create much inconvenience; as some places are far from others, while other districts present but little to do. These observations allude more particularly to Bengal, but they are by no means inapplicable to Madras also, and would occasion a considerable saving on both those establishments, without any injury to the public service; indeed, on the contrary, the compactness of space for supervision would amply compensate on the score of dispatch of business.

As a further elucidation of the subject, I shall quote the sentiments of the higher authorities, embodied in a minute of the Honourable the Governor's, and then afterwards proceed to state my own opinion.

"It is my duty to bring before the Board those revisions and reductions in the Engineer department, which will modify that body conformably with the orders of the Honourable the Court of Directors and the Supreme Government, and unite as far as we can attention to these with the objects of œconomy and efficiency.

"The late changes in the duties of the engineer corps place it in my power to carry into execution the repeated orders of the Court of Directors, for transferring the pioneers to that department.

"The benefits of this measure, in a military point of view, are no longer disputed; but various causes have hitherto prevented obedience to the repeated orders of the Court of Directors upon this subject, of which the pioneer corps of the several Presidencies have been very efficient; and it cannot be otherwise while the present system continues. By the transfers I propose, the Government will not lose the labour of these men; many of them will become qualified as overseers, that without lessening their use in peace will render their services invaluable on the occurrence of war. The objections of the deficiency of the engineer officers still existing, and my knowledge that the Court of Directors would, at the present moment, agree to no augmentation of their numbers, prevented my proposing at the period I wrote this minute, that a transfer of the pioneers should be made to the engineer department. The recent revision of the duties of the engineer corps, however, has wholly removed this objection, and it was one of the results to which I looked when I brought forward that measure.

"Subsequent to writing the minute I have alluded to, Government has been called upon to reply to the approved recommendations of the Finance Committee, for the revision and reduction in the engineer department; on some parts of which I have given my sentiments, and on others have reserved them, in order that I may go fully into the present part of the subject. I have also been requested by the Governor-general to give him my own opinions on the composition and state of the different branches of the army, which I mean to do. And as my senti-

ments on the part of that subject which relates to the engineer corps continue unchanged, I shall assuredly recommend the adoption of the transfer of the pioneers to the engineer department: and I can further state my conviction, that further orders will be repeated from England to carry it into execution. And thus deeming it adviseable, and considering it unavoidable, I shall proceed to state the mode I consider best calculated to effect this object with attention to œconomy, efficiency, and local circumstances.

" The pioneers may, I think, be transferred on the 1st of November, and incorporated in the corps of engineer soldiers, which will then, besides the present small company of Europeans and youths sons of Europeans and Anglo-Indians, consist of two companies of native sappers and miners, and six of pioneers. This corps will have a fixed head-quarters, the officers commanding at which can detach parties as required where there is an engineer officer.

" The engineer corps, consisting altogether of about five hundred men, would I conceive be of the greatest service, not only from the instruction that men and officers would obtain at the depôt where the head-quarters was fixed, but from the establishments they would soon furnish the engineers employed on executive duties, and they could carry on public works in their vicinity, aided, when wanted, by day labourers; and on this point of the subject it may be affirmed, that under the plan proposed, the common men of the corps would soon be able to give better instruction to those who worked with them, than non-commissioned or even commissioned natives can at present. This is no reflection on the zealous and efficient officers attached to the pioneers. If they have the same science even as engineer officers, they have neither the same means or opportunity of exercising their skill, nor have their men when labouring or relieved from it a school of instruction, and examples, which continually though imperceptibly advance them in that knowledge which must render them so useful as engineer soldiers, both in peace and war.

" With reference to the first, Œconomy, it is to be observed that the saving in the engineer department consequent to the adoption of the measure recommended in my minute of the 1st of May, 1830, is estimated by the Auditor-general in his register for June, 1830, at (48,000) forty-eight thousand rupees, part of which will be prospective; but the whole will, I trust, be effected at an early period: some additional expense will no doubt fall upon other departments consequent to this arrangement, but assuredly none that can subtract one fifth from the saving.

" With respect to the performance of the duties of the civil engineer by the chief engineer, as recommended in the twenty-fifth paragraph of the Finance Committee's letter, it would be contrary to the important principle of preserving him in his duties as a controlling officer; but it would be consistent with this, that he should perform the duties of inspecting engineer. And considering that when the Town Hall is completed, no more public works of magnitude will be required at Bombay, I think that one officer of rank, with the aid of an efficient assistant, might perform all the executive duties, civil and military, at the Presidency.

" The chief engineer, Colonel Goodfellow, with whom I have most fully communicated, not only upon this, but every other point relating to his corps, in a memorandum I have just received, states as follows:

" ' If it should be found necessary to do away the appointment of the civil engineer, it should be incorporated with the office of superintending engineer, from which it has twice emanated, in consequence of the duties of the two being found more than one officer can well attend to. The last separation took place in 1820 or 1821, was approved of by the Honourable Court, and the salary fixed by them. It is true that both appointments are now under the charge of one officer, but the great want of engineer officers has rendered this necessary as a temporary measure. I am clearly of opinion that to do the duty of each office properly, two officers are required, or at any rate one officer and an European assistant in each.'

" When the two offices were blended, about twenty-five years ago, the establishment was not dispensed with; and that now proposed to be added to the chief engineer, for conducting the duties of the civil office, is quite inadequate in amount, and if enforced will only be an imaginary saving, whatever office it may be added to; for such people as will be required beyond it must and will be put upon the works.

" The chief engineer, by the Honourable Court's order, more than thirty-five years ago, was made an officer of control solely, and restricted from having anything to do with the expenditure on public works. If the Honourable Court thought such a measure proper in those days, how much more so is it now, when the expenditure is unavoidably so much increased. As an officer of control, I have full occupation for my time, and it would be quite impossible for me to perform the current duties of my office as such, and to make estimates and look after the work-people employed in the construction and repair of public buildings at the same time; setting aside the inconsistency of blending the two appointments of controlling the executive officer, and the derogatory employment it would be for an officer of my standing and rank, which, as well as that of the commandant of artillery, is I believe generally understood to be little inferior to that of the brigadier.

" The natural consequence of such an arrangement would be, that the issue would gradually, if not all at once, fall into the hands of inferior agents or natives.

" Notwithstanding the chief engineer's opinion to the contrary, I see no difficulties that

cannot be overcome, to the executive branch of the engineer establishment being reduced to what it was in 1821; and one officer of rank and experience, aided by an efficient assistant, performing, under the orders and control of the chief engineer, the combined military and civil duties. This arrangement will enable Government to dispense with the inspecting engineer at the Presidency, as well as the station of civil engineer. And as the duties of this officer in the southern division are as yet limited, I think the appointment may be abolished; and when the Madras troops leave Belgaum, an executive officer may be named to that station, either reporting direct to, and being controlled by, the chief engineer or the inspecting engineer at Tannah, as may hereafter be deemed most advisable.

"The arrangement will create, besides the saving calculated by the Finance Committee, of rupees	10,548
" The allowances and an establishment of an inspecting engineer	16,020
" The extra pay and allowances to the nine infantry officers and staff now attached to the pioneers	24,240
" Making a total saving by what is now proposed, of rupees	50,808

" The increase would be the difference of the personal allowance of his rank to a commandant of engineer soldiers and superintendant of depôt above that now drawn by the lieutenant in command, which supposing the situation to be filled by a captain, as is most probable, is rupees	1,890
" Add the difference of 200 rupees *per mensem* to the same officer for commanding a corps, instead of its present two companies, rupees	2,400
" To the staff and personal allowance of his rank to the officer performing the duties of quarter-master and pay-master	4,584
" To the pay of an additional executive engineer for the duties of Ahmednuggur and Candish, being the personal allowance of a captain	5,040
" Making a total, the first and last items of which are liable to fluctuation, of rupees	13,914

" All young engineers should be employed under the commandant, either at the depôt or upon the public works in its vicinity, at least for a twelvemonth before they were detached; other officers for whom there was no specific duty, might be usefully attached to this corps, especially when employed in forming roads and bridges. There might also be great advantage in permitting, when the Commander-in-Chief chooses, infantry officers to attend for a short period at this depôt to receive instruction in military service.

" Calculating the effects of the reductions of the executive engineers at out-station, the abolition of the station of inspecting engineer and of civil engineer at the Presidency, and the transfer of the pioneers to that department, the whole amount of actual and immediate saving by these arrangements must be estimated at more than sixty thousand rupees *per annum*. The progressive saving that must result from the measure will, I can pronounce on the most minute knowledge of the system it supersedes, be very early more than double the amount; and as far as my experience enables me to judge, no serious inconvenience will be incurred, and the true interest and efficiency of the corps, as well as the public service, are on many points essentially promoted.

" I must, for a variety of reasons, of which I shall state the principal, prefer Seroor to every station for the engineer corps of soldiers and depôt.

" 1st. This station is acknowledged to be one of the healthiest, if not the healthiest, under this Presidency.

" 2nd. It is now a matter of regret that it has ceased to be a military station; and although I mean to propose that on account of the cheapness of grain and plenty of forage it may be made the head-quarters of the Poona auxiliary horse, that will not, when Sir Lionel Smith and his staff leave it, save the excellent Bazar, full of old camp followers, from ruin.

" The country around has suffered much from our troops leaving Seroor, and will suffer more when it is almost wholly deserted.

" 3rd. Seroor, since we made Ahmednuggur a considerable cantonment, has become more necessary than ever as a station to be maintained. It is exactly half way between the former and Poona, and is from position of consequence as a place of refreshment and supply.

" 4th. I deem it of primary importance that the engineer corps should be separated from other troops as much as possible; the officer at its head should have the whole conduct of its details, as well as the general command. The young officers are better at a distance from the dissipation and temptations of a large cantonment; and it is of great consequence that the Europeans of the company of artificers and youth that are training for the higher duties of the corps, should be removed from the society of other soldiers, and be in a place where they can have liberty, and their bodies and mind kept healthy, by being free not only from vicious association, but from those necessary but fretting restraints that are indispensable, when in large antonment or the vicinity of large towns.

" 5th. I consider that no outlay having been incurred at either place, it will be no more expense to build at one than the other; but from the many buildings for sale at Seroor, and that at a very moderate rate, that may be adapted for barracks and workshops for the few Europeans of the corps, or hospitals for the natives that may require it, there would probably be a saving in this point. It would also be a great convenience to officers attached to this corps to have houses they could rent; but all this, if the plan and station are approved, can be better ascertained by the survey and report of the inspecting engineer of the division.

" The sixth reason for choosing Seroor as the best station for the corps is, that I trust my colleagues will concur with me in thinking, that now the road by Nasseik is finished, and the Bhore Ghaut will be completed in two months, that the next public work of this Presidency should be the military road to Ahmednuggur from Poona; which in one line joining the great road to Nasseik, and in another that to Arungabad, would be advancing our communication by Candiesh with Central India, and by Nagpoor to the Bengal territories, and must be for these reasons one of the most useful public works that can be contemplated. This road could at once be assigned to the officer commanding the engineer corps at Seroor; and working from that station as a centre, with such extra aid as Government might deem expedient from time to time to assign him, he could gradually complete it; and from the numerous small bridges to be made, and the rocks to be blasted, he could combine many parts of his labour with the instruction of his men.

" The Commander-in-Chief, if he desired any men of the line to be instructed in the use of pontooning, might send detachments from the stations of Poonah or Ahmednuggur to Seroor, and the river at that station would offer in this respect many advantages, both to the corps itself and to others who come for instruction in a branch of military science singularly essential to facilitate movement in India, and which,—I speak on the highest authority (Colonel Pasley), —never can be learnt except by practice on streams similar in their current to those which our armies when in military operation have to pass.

" I have viewed this question as a whole, and if adopted as such, I should be confident of its full success, but I should lose this confidence were it partially adopted. I may also add that if this depôt and corps is placed on the footing I propose, it would be early enabled to contribute essential aid to our civil department, in which there must be frequent demand for persons who, combining practical knowledge and science, can from doing so direct or superintend the works which under recent arrangements are so frequently required to be undertaken in that branch of the public service."

I shall now add the following practical remarks. The mode in Bengal is, that the engineer officers or barrack-masters make their own supplies, agreeably to the estimates they furnish the Military Board, who sanctions it. At Madras the engineers with large establishments make their own supplies by contract through the Commissariat; and at Bombay they make the supplies by contracts under the authority of the inspecting engineer. At Madras there are no inspecting engineers, only superintendants, committees performing the duty of inspection, which is effected in Bengal and Bombay by divisional inspectors. I should think the Madras plan the least expensive, every thing considered; for they are at no expense for inspecting engineers, which at the other two Presidencies has increased the charge to a great extent.

The constitution of this department under all the Presidencies is the same,—the officers who are for constructing buildings doing the duty of civil and military engineers. But I cannot avoid noticing one singularity existing in Bengal, that officers of the line are employed for such situations, notwithstanding there are engineer officers disposable for that duty; which latter are attached to the corps of sappers and miners, instead of being engaged in the more scientific and appropriate duties of their own profession: consequently a remarkable incongruity arises, of practical men superintending those scientifically educated, as some of the superintendants are infantry officers, and the executives engineers: this is in direct opposition to the Court's orders of the 26th July, 1826. At Madras and Bombay the occurrence of a deficiency of engineer officers is partially provided for; and the same mode should be adopted in Bengal, of making officers of the line eligible for executing any temporary public works, with a fixed rate of salary. There is no reason why one uniform system should not prevail, for at present the three Presidencies appear to be guided by no fixed rule, to say nothing of the ill appearance of an unequal distribution; as the number in the public returns in one division alone in Bengal is equal to the whole establishment at Bombay; while at Madras every superintending engineer has one or two assistants on the staff pay of 262½ rupees each, merely for military duties, in addition to a separate officer for civil duties.

The allowances granted to the engineer officers for executing public works vary under the three Presidencies, although the Honourable Court, by their orders of 11th October 1816, to Madras, fixed an allowance* which marks the distinction of ranks, though doing the same duty: this is strictly followed at Bombay, partially only at Madras, and totally unregarded at Bengal. It is thus evident that upon the whole the Bengal system of allowances is the largest; while the

* Field-officers 700; Captains 420; Lieutenants 262½.

dividing of the duties of the chief engineer into superintending has increased the expense upon an estimate, I believe, to 150,000 rupees *per annum*, and at Bombay of rupees 46,000, which probably gave rise to those repeated orders of the Court of Directors to the Supreme Government, to place the engineer officers upon the Madras footing; although I am not sensible that, except in the instance of inspecting engineers, their plan is either more efficient or more œconomical, as they divide the duties into military and civil, which with few exceptions have two distinct officers for each station, while both duties are performed by one at Bombay and Bengal. I must confess I prefer the plan of superintending or inspecting engineers to committees, particularly if the mode of proceeding of the latter is not very strictly attended to by the local commanding officer.

Sappers and Miners.

Before I enter upon the main question, by stating my own views of it, I shall introduce as a species of groundwork, the orders of the Honourable the Court of Directors, the sentiments of the Honourable the Governor (Sir John Malcolm), those of His Excellency Sir Charles Colville, and of the chief engineers, Colonels Brooks and Goodfellow, mentioned in the Honourable the Governor's minute of the 16th August, 1830. It proceeds as follows:—

"The Court of Directors, in a letter dated the 27th December 1822, state, that having taken into consideration the system of officering the pioneer corps, they are of opinion that it would be for the good of the service if they were to be transferred to the engineer corps, and placed under the command and direction of officers by whom they might be instructed in the art of sapping and mining, and other branches connected with the engineer department; and at the same time those officers might be employed in superintending the works carried on in their respective districts.

"The Court likewise give it as their opinion that no specific number of engineer officers need be attached to the pioneers, with the exception of commandant and adjutant.

"Lieutenant-general Colville, after expressing his concurrence as to the necessity of having a corps similar to the royal staff corps (in England), or to the sappers and miners, the Bombay pioneers the Lieutenant-general thought could not be properly instructed as sappers, &c., without a considerable increase of establishment, or by their being employed as overseers of workmen. He suggested the expediency of assembling a certain number from each company, to be placed under officers, competent from their knowledge of the Hindoostanee and Mahrattee languages, as well as talent, to instruct them in the duties of sappers, &c.

"The chief engineer (Colonel Brooks) gave it as his opinion, that to carry this into effect it would be necessary that the non-commissioned officers should, in the first place, possess a knowledge in various branches of which they are at present ignorant; and referring to their actual employment, he suggested the establishment of a corps of sappers, &c., distinct from the pioneers, commanded by engineer officers: to these, when trained, should be attached in rotation a company of pioneers to instruct the remaining portion of the corps. That in time of peace a body of well-trained sappers and miners would be very useful, if attached to the executive engineers of fixed stations.

"The chief engineer recommended strongly an increase of the officers of the corps to carry this plan into execution. In answer to his proposition the Governor observed, that the chief engineer's view of the case having embraced two propositions not contemplated by the Court, viz., an increase of the establishment of the engineer officers, and the formation of a corps of sappers and miners, he could not sanction such augmentation, but will submit them to the Honourable Court. In the mean time the Governor suggested the expediency of commencing instructions in sapping and mining, to a certain degree, and will consider of any arrangements which may tend to carry the same into effect.

"The Court's letter, dated the 8th February 1826, and their military letter of the 22nd December 1822, state it to have been their intention that the pioneers of this establishment were to be put under the command and direction of officers of engineers. The chief engineer (Colonel Goodfellow) gave his opinion, that as the Court of Directors have not thought it necessary to raise a corps of European sappers, the pioneers are the only substitute for them; the Court's arrangement respecting them should be carried into effect; that a captain and subaltern of engineers should be nominated commandant and adjutant; he thought two companies of pioneers chosen in rotation, always at head-quarters, who would not only assist the officer in training the recruits, but might be of material service if employed in draining or embanking land subject to inundations. They might also be occasionally instructed with advantage in the art of sinking shafts, pontooning, and rigging of suspension bridges."

From a perusal of the Honourable Court's letter, he imagined they did not at the time of those orders fully comprehend the nature of the application made to them by Colonel Brooks, which he understands not to have been for a corps of *sappers*, &c., raised in *England*, but for a few Europeans selected from regiments in this country, who might have been with little expense instructed by engineer officers in the duties required of them.

"In every branch of the Indian army it has been found necessary to introduce a proportion of Europeans, and in no branch of the service is their skill and intrepidity more likely to prove

serviceable than in the sappers; and in addition to the transfer of the pioneers, he recommended that ten European lads be attached to each company, who, when competent from their knowledge of the duties required in this branch, would be eligible for promotion; and it would, he thought, be necessary that the pioneers should be enabled to act offensively or defensively as the occasion might require, which purpose would be answered by their being armed with fusils and drilled as infantry.

"The foregoing arrangement being considered as the most eligible, the Adjutant-general received instructions to continue the pioneers, at that time employed in road-making, without any reduction, and such a body of men to be raised by recruiting for the sappers, as there were engineers sufficient to instruct. The Honourable the Governor in Council likewise sanctioned the addition of European lads in the sappers, in the proportion of ten to each company. The chief engineer being required to state the number of men the European officers of the engineer corps would be able to instruct, and the description of persons best fitted for sappers and miners, states in reply, that the commandant and adjutant, if appointed to the corps agreeably to order, will be capable of affording instructions to five hundred natives, with the proportion of artificers."

The Honourable the Governor then proceeds to explain his own views and deductions on this serious subject, and continues:—"When I left England I was under the impression that the orders for transferring the pioneers, so repeatedly sent, had been obeyed. This measure having been originally suggested by me in 1817, and this transfer as a part of a plan for forming a corps of engineer soldiers, were the result of much experience, and are fully embodied in the concluding chapter of Captain Lake's excellent work on the Sieges of the Madras army. On my arrival at Bombay, I was informed that the want of engineer officers was the reason why the pioneers were not placed in that department, and that a corps of sappers and miners had been formed of Europeans and Sepoys drafted from regiments of the line, all of whom were high-caste Rajpoots, who it was expected would answer every purpose. They were cantoned at Versuvah, were well instructed, and it was meant to send companies of pioneers, as they could be spared, to receive casually, as opportunity offered, that knowledge which is so essential to engineer soldiers. This plan, I considered, would answer only so far as to prepare a small body of men to be useful at a siege, which, judging from the actual condition of India, was not likely to occur once in five or ten years: they were from their composition not calculated to be useful in any other way, and their expense, for which there was no return either in duty or in work, was greater than the state of our finances could warrant the continuance of. With respect to the project which had been made of one or more companies of pioneers occasionally joining the sappers and miners, and learning their art, I know from experience that it would be found at once expensive and inefficient to the object; and I was quite confirmed in this opinion by the difficulties that occurred *, and the little good done when a party were brought to work with the sappers and miners in 1829.

"The pioneers are a most valuable body of men; but I wish now, as I always have done, to see them, if expected to aid the engineers in the field, altogether transferred to that department. The natives of India must look exclusively to one branch of the service; and while pioneers are under infantry officers, they will never enter with that spirit into the duties of sappers and miners, which are to qualify them not only to aid that body, but to be selected into them† when vacancies occur. There is no reason why their labours should not be directed as profitably to the public under engineer officers as under infantry, and I am decidedly of opinion that it will be more so; for independent of the labour of roads and bridges, the pioneers attached to the engineers will increase the power of the commandant of that corps to form the establishments of executive officers, and not only (as pointed out in my minute of the 1st of May 1830) to prevent the great abuses that were inseparable from the former system, but to promote at once œconomy and efficiency.

"But particularly those at Madras become well instructed in the military parts of their duty, by constant practice in the field and at sieges: but, employed continually as pioneers during peace, when that is of any continuance they must lose all efficiency, except as attached and well practised military labourers; so that as far as the making of public road is concerned, their employment to any extent is most unprofitable. The subsequent inquiries I have made, lead me to assert that reckoning the batta he always draws when employed on roads, his clothing, and the pension to which he becomes entitled, and the other items that may be brought into the estimate, the pioneer's labours on the road at a cost of ten rupees each man to Government, while the pay of a labourer is only four rupees‡ *per mensem*, I should not consider the pay of a pioneer too great, if the corps was acquiring and maintaining during peace that instruction and knowledge which would render them in war complete aids to a branch in which aid is so much required as the engineer department: but at present they neither are, nor can become that aid; their lessons must commence when required to act; and they, and probably their officers, must learn under the fire of an enemy how to form a battery or shape a trench; and be taught when

* Vide Proceedings of Government.

† The sappers and miners have a higher pay than the pioneers.

‡ I am afraid this estimate is too low.—E. F.

on its banks how their labour may assist an army in crossing a river. And they will from being wholly under engineer officers and incorporated in the higher branches of that corps, early attain an efficiency as engineer soldiers.

" From the manner in which I propose this corps to be constructed and employed, I anticipate that it will, on the reduced scale, be almost as efficient, as far as its numbers went, from the various duties for which it would be required, in the event of war; while in peace they would, or I am greatly mistaken, more than pay themselves. Numbers will be eventually distributed among the officers of the engineers' department, while those not on detachment would be improving at head-quarters; but those should be employed, when practicable, on public works: for the fact is, there is not that balance of advantage in keeping up a corps of this description that can reconcile Government to maintain them in peace, without it has a return in labour obviously productive of public benefit and a saving of disbursement; and I cannot understand why almost as much may not be learned under able superintendants by the labours of artificers and in useful works, the construction of bridges, the formation of aqueducts, and the mining of rocks, to clear passes, as in making models or learning their duty on a practice ground.

" I must consider the present arrangement as the commencement of a system which would gradually (when there are officers sufficient for the charge) lead to the transfer of the pioneers to the corps of engineer soldiers, and artificers would become a superior branch of that corps. This measure has been directed by the Honourable the Court of Directors in their military letter, under date the 22nd December 1822; and to all the arguments against this plan I am perfectly satisfied that though a few pioneers might be necessary for camp or cantonment duties, the corps intended to be useful in the field in erecting batteries, digging trenches, &c., and employed during peace on roads, bridges, and public works, should be in the engineer department.

" I think we can place it, consistent with those considerations of efficiency and means of prompt action, in every military branch, which in an empire like India it would be the opposite of true œconomy to neglect.

" The numbers of Europeans and youth, sons of Europeans and Anglo-Indians now belonging to sappers and miners,—and their education will qualify them to aid and occasionally to superintend public works of every description, as well as the particular duties of the corps to which they are attached,—will act under him, i. e. an engineer officer, and where there is not one, they will be placed under an officer of the Quarter-Master-general's department, or local staff officer. I trust that on the organization of the corps some further reduction may be made on its expense without any sacrifice of its efficiency; but such detail of the plan that is adopted will be next carried into execution.

" I consider it quite essential that the station of commandant be always a selection by Government, but that it should be on a footing that made it a point of ambition of the engineer officers. The course of instructions which he would have to give to officers, as well as other duties which would fall to his charge, should combine that experience, knowledge, and personal character, so necessary in my opinion to give full success to this plan.

The Court of Directors have sanctioned a commandant and adjutant to this corps. I must for many reasons recommend a Quarter-master, whose duties in charge of stores and as paymaster, from head-quarters of this corps being an engineer depôt, and from its composition rendering it liable to such frequent detachments, could not be performed by the adjutant.

" Much would depend upon the stations for the engineer corps and depôt. The sappers and miners are now at Ahmednuggur. Buildings are commenced for them, and 4000 rupees has been expended; but contemplating the arrangement I now propose, I stopped Captain Jervis the inspecting engineer from proceeding further, and learn from him, that if the building is not required for the sappers and miners, it can without expense be converted to a lock hospital, the estimate for which has been sanctioned. This is therefore no loss on this score.

" I must further state, upon this point, that recent inquiries have satisfied me, that all men regularly employed in public works, like sappers, miners, and pioneers, from June till October, a period of four months, can in common seasons work three or four days more in the week than on the Ghauts or below them. The year before last upwards of 100 inches of rain fell in Bombay and the Concan. There was at least that quantity on the Ghauts, while there was only 20 inches at Poonah, and less at Seroor and Ahmednuggur. To the roads in the Concan, therefore, a few pioneers as overseers should only be attached, as the price of labourers in that country renders their employment much more œconomical.

" The engineer soldiers could do the little military duty necessary at Seroor, and their engineer corps would in all respects be complete within itself, and be a nucleus upon which any number might be formed with facility; engineer officers would preserve that part of their education they receive at the depôt of instruction at Chatham, and would never lose, as they now do, the habit of commanding soldiers, as well as of directing artificers, sappers, and labourers. This would be a most efficient improvement in a very essential branch of our army.

" The present proposition as to the mode of carrying into execution the orders of the Court of Directors is nothing new, as far as the corps and depôt of engineers is concerned. It is

merely following up to its completion the plan recommended in my minute of the 9th December 1829, which was approved and adopted by Government."

Having submitted this comprehensive description of this corps, it might appear that I can have little to say that could add any information. I shall, however, with permission, subjoin a few remarks, which, though less of a scientific than a practical nature, I conceive belonging to this Report; the object of which is doubtless to produce those details and particulars that tend to elucidation, and to show that efficiency which is combined with œconomy. I shall proceed, on the basis of the two latter objects, to observe, that upon a serious consideration this corps of men, which is the only one in the Indian army that in any way approaches to what may be deemed a staff corps, and as a separate one I am very much inclined to look upon it, on its original footing, more in the light of one for exhibition than real utility;—for what sieges, with a reference to present and prospective events, can we have to undertake, now that all the forts are either destroyed or in our possession? And I think I am not hazarding too much in saying, if this opinion requires confirmation, it is not unknown that we besieged and took forts without such a corps; and the only instance in which they were used was the last Bhurtpore war: as to the superabundant means employed on that occasion I shall make no remark, and there our battering artillery did everything. On the advantages of giving persons of this class of our army this species of scientific education, I have strong doubts, which I do not deem necessary to state, as political affairs do not form any part of this Report: besides, what is there that a good disciplined pioneer, under proper commissioned and non-commissioned officers, could not effect, with an engineer to direct, that is required from these highly paid people who are but seldom, even during war, employed, and can only put their hands to one kind of work during the probable period of half a century? I am aware I am urging points that will be strongly contested; and I have nothing but my own experience of past service to plead, which makes me give a most decided preference to a pontoon corps, where a single corps only is maintained. There is no country upon comparison that presents like India so many obstacles to the advance of an army for four months in the year; from the passage of large and small rivers, and nullahs, and the greater streams all the year round. Let us only reflect on the common fact, that the three armies have detachments, and even whole battalions, moving in different directions at *all seasons*; not to notice the biennial reliefs, which latter are certainly connected with our system for the maintenance of proper discipline; and though a trite aphorism, still it is not the less valuable, —that troops should never occupy any station so long as to make them feel a disinclination to leave it. Here then we have an obvious and direct use, if not a necessity for pontooners; and we know further, that Government are at a considerable expense to maintain the common and indispensable ferries for the usual thoroughfare of the great rivers all over the country. Had there been any corps of this kind, I should not have had it, most likely, in my power, at this late period, to instance two occurrences as proofs of so essential a part of military equipment being so defective. In 1827 the Belgaum force, ordered to attack the Kolapore Rajah, could not approach his capital in the month of September, from the want of pontoons and boats, there being two small rivers in their route impassable; and the troops under Colonel Wilson, that were to cooperate from Poona, could not cross the Kistna to join Colonel Welsh, for the same reason. At last the round basket boats of the country, covered with leather, were put in requisition, and in crossing the light six-pounders their bottoms were soon beat out.

I have been able in more than one instance to cross rapid streams in a single canoe, making a horse swim on each side in much less time, and with less difficulty, than other persons who were endeavouring to cross in the basket boats, which after a little, acquire a rapid rotatory motion that renders them unmanageable, and makes one reach the other side at random far down the opposite bank.

The other instance is rather of a different kind: Boats are absolutely necessary even in the month of May, the dry season, to cross the Godavery at Rajmundry: for this purpose there are a number of large and small heavily and expensively built boats of the clumsiest shape it is possible to conceive; the current in that river is at all times strong, and for five months in the year particularly so. Why therefore boats of a construction that combine lightness and strength, and of easy management, should not have been adopted, when so much expense is incurred for those in present use, I am totally at a loss to conjecture; besides, unwieldy boats are dangerous from the deficiency of power to control them, as the number of men employed in them is never equal to the work of impelling them across to the proper landing-place.

I do not recollect any attempt ever having been made to establish a corps of pontooners, except a proposition by Lord Hastings, which was never carried into effect.

On the continent of Europe there are various ways of passing the great rivers,—ferry-boats, bridges of boats, &c. But the most ingenious contrivance I recollect for this purpose was a *pont volant* over the Waal, in the road from Amsterdam to Nimeguen. It consisted of two very large boats, over which was fixed a firm platform, large enough to contain five or six carriages with their horses, having its prow stemming the current of the river; and from the top of a stout short mast, of about twenty feet high, a strong rope was extended along a line of five or six small boats, the size of an English jolly-boat, the furthest one being secured by an anchor, and exactly

in the middle of the river: when the ferry-boat was pushed off from one bank, and the two helms placed in a proper position, the current acted upon it, and swung it across the river to the opposite side without sail or oar; while all the little boats according to their proximity swung also, describing the segment of a circle corresponding to the distance each had to go to keep itself in the straight line drawn from the anchor to the landing-place.

It might not be altogether irrelevant to this part of the subject, which is certainly of much general interest, to notice some of the means in practice amongst the natives of India, who must be allowed to possess ingenuity in the application of the various means in their power for many useful purposes.

Besides the usual common ferry-boats, canoes, and even the Chaharpoys, or common wooden sleeping cot, placed on earthen pots and large gourds with their mouths downwards, is a species of round basket about seven feet in diameter and three deep, made of different kinds of materials, according to the local productions of the country, covered with skin. My object in mentioning this curious kind of conveyance, is not only to notice its utility, but the extraordinary coincidence of precisely the same kind of machine being in use from time immemorial on the Euphrates, and mentioned as the only boat or water conveyance on that river by Herodotus, except the very large rafts on which the merchants from Armenia and the North floated down annually, which were principally supported by inflated skins; and the only difference that seems to exist between the Indian and the Arabian round boat, is that the latter is made of rushes and reeds plastered over with bitumen, and the former is made of bamboos, grass, &c. covered with hides.

I wish also to notice that ingenious contrivance called the Shakspear bridge:—it may not, strictly speaking, be an invention, as the original principle of it is to be found in South America, but the application of it in India demands for the author the highest commendation for his ingenuity in improving and applying it. The wood, ropes, reeds, rushes, and rattans are abundant in Bengal and the adjacent countries, for the construction of this most lengthy of primitive bridges. The present splendid chain-bridges are, I have no doubt, originally deduced from the idea of the South American bridge; and the one now in use on Mr. Shakspear's plan is constructed of the rudest and simplest materials. The platforms are entirely of split bamboos, laid over ropes formed of coir (the fibres of the cocoa-nut husk,) and rattans, the latter sometimes of 80 and 100 feet long.

Mr. Shakspear in his improvements has not omitted to introduce the scientific mode of supporting the platform by a number of ropes ranged on each side, in imitation of the perpendicular iron rods used in the chain-bridges. The great beauty of his bridge consists in its simplicity, cheapness, and the complete suitableness of it to the countries for which he has offered it. Every part of India furnishes some kind of materials that can be applied for its construction, or substituted for those he mentions. I believe it can be used for a span of 100 and 150 feet and upwards. The forest-trees of India supply the upright points on each bank of a river, the cocoa-nut produces the ropes the rattans, the binders for general connection and support, and the bamboo answers admirably for the platform.

I may appear to have digressed on this subject, and shall return to the original point by expressing my surprise that a pontoon corps should have remained so long undetermined on after so many discussions of it. One would imagine that the unfortunate affair of the Chumbul under Colonel Monson (27 years since) would have pointed out the necessity, and have given time for the introduction of some plan that would have rendered the movement of our troops a matter of less difficulty than it is even at this late period, when so many experiments have been tried, and succeeded by no regular plan.

I do not conceive I am in the slightest degree deviating from a correct idea of the question by objecting to the sappers and miners as a separate corps, as I am perfectly convinced that the class of men so employed, if taken from the pioneers, would soon be instructed in everything necessary for them to know, and which they would soon perform with equal dexterity as the present corps of sappers, who are working and constantly trying expensive experiments, the art of which is well known to every engineer officer, and could easily be communicated. Their expense is a dead loss to the Government in time of peace, of which the Honourable Court seemed sensible in their letter of the 25th November, 1823, to the supreme Government. The proposed arrangement just introduced at Bombay will meet the Court's wishes, by making them form a component part of the useful corps of pioneers, to consist of eight or ten companies of one hundred and twenty rank and file each, who would thus become more perfect in their own duties of road-making, constructing small bridges, with the additional knowledge of making mines, fascines, and gabions, &c. &c. Twenty in each company might be trained as sappers and miners by the European officers for the more difficult and scientific parts of their duty as above mentioned; and under these circumstances the commanding officer and one half of the subalterns should be engineers, and the adjutant, and the other half of the subalterns, should be *infantry officers*, to introduce and conduct for a time the usual *regimental duties*, with which engineers cannot be supposed to be so intimately acquainted. One company to be attached to each division of the army under the Quarter Master-general's department, and the others to form the head-quarters of the corps, and be disposable for the usual routine of the service. The

proposition, if adopted, will prove a saving; since, though it will increase the men to one hundred and sixty, or rupees 1,140 *per annum*, in the pioneers, it will diminish all charges of the sappers, amounting to rupees 7,000; as the officers will be the same both with respect to numbers and allowances, and the utility and efficiency of a corps formed upon such principles must be too obvious to require being dwelt upon.

If the same rule were applied to Bengal and Madras, considerable reductions would be effected, without any detriment to the public service; on the contrary, it would lead to that uniformity of system and action, producing benefits on the widest scale, that are well known to those accustomed to contemplate questions like this so intimately connected with the effective state of a well equipped army.

I am much afraid that my anxiety upon so important a point as this has led me to express opinions not only strong in themselves, but contrary probably to the received notions of others of greater experience and judgement than myself: however, I hope my readiness to explain will, in some measure, be interpreted as having but one motive in stating objections; as all I aim at is to show that the combination of science and practical labour by the two corps being in one, and working under one head and on one system, scientifically directed, would produce by their joint efforts those results that might reasonably be expected from such an union.

By this I think it will be seen that I do not deny the utility of sappers and miners, but only object to them in a *separate* state. The corps having all engineers ultimately is as it should be: all that I contend for is, that in its infancy engineers themselves require being taught regimental duty. And who is to do it? The artillery officers cannot be adduced as a parallel case, as they are taught discipline and regimental duty from the day they join their regiment. The engineers are a staff scientific *body* to act and *superintend* separately and individually. No man can have a higher opinion of engineers than I have, but my object is to keep them in their own sphere as directors and not executives. Were every one of them carried through Colonel Pasley's system of regimental as well as engineer duties, the question would be at rest. But the system was not that, nor had they any men or companies to attend to in their interior œconomy as regimental officers. The late orders directing all young engineer officers to be attached to the sappers and miners in the first instance is the most effective mode of rendering them regimental officers: and whatever may be an individual's talents and education, discipline will never injure them, but on the contrary assist their development and chasten their action.

Military Board.

Bengal . . .	Rupees 57,016	Salaries 88,140	Establishment.
Madras	29,160 . . .	36,183	——
Bombay	15,603 . . .	14,040	——

The item for establishment for Bengal I shall first discuss, as the largest sum*, though it may be replied that it provides for and conducts a very great part of the military expenditure of the army; which, however, is hardly a good argument for such an enormous charge, *three* times as much as at Madras, and *eight* times as much as at Bombay†; while it is well known that the business is tardily done.

Much of this expense arises from the high pay given to examiners, accountants and draftsmen, the first of whom, properly speaking, belong to the auditor-general's office, and the latter to the Chief Engineer's office; in the former of which the auditing of all the army expenditure, including depôts, &c. should take place, and in the latter the plans of edifices, &c. should be drawn.

For the duty of the engineer money-bills and plans, there appear to be nineteen writers and two draftsmen, besides twenty-four writers for the Ordnance department, and thirty-two for general and current duties. The effects of this accumulation cannot escape remark, and must be perfectly evident to any one in the slightest degree conversant with business.

It would probably be found, that a very considerable reduction in work and expense would take place if the business of the department was properly distributed; for even the Secretary himself has been known repeatedly to complain of the load of business on his hands, which made him propose both an increase of salary and being constituted a member of the Board. But in a Report of this kind it can only be pointed out, wanting room for many details; for it must be obvious to any one acquainted with the existing system, that an overcharged machine of this description cannot work with that facility that it would do if its several branches were carefully disposed of into their natural hands. An examination of this immense department, which in process of time, and the accumulating spirit of its officers, became a general board of works and expenditure, produces the conviction that a complete reform of it must at some time follow, from the position in which it is now placed, and to which it was gradually brought by those who influenced its powers.

* About one crore and 9 or 11 lacs.

† This estimate includes the extra contingent charge,

The Military Board at Calcutta was, no doubt, first intended as a Board of *primary examination* and *check and control;* it has been transformed into a department of expenditure: for the Commissariat, amongst other sums that it carries to its own credit, *debits the Military Board* 349,511 rupees, the Barrack with 354,747, and the department of Public Works with 43,331. Though all these departments are under its control, notwithstanding the large sum against the barrack department, the engineer progress Reports exhibit charges by the several barrack-masters for barrack furniture. This fact alone would be sufficient to show the impracticability almost of ascertaining the real aggregate amount of the expenditure of any single branch; and it appears at the same time that the constituted officer of Government, the Auditor-general, never has these accounts submitted to him but as a member of the Military Board. It is true that the Secretary has part of the duties of the Auditor-general, Commissary-general, Quarter Master-general, and Chief Engineer to perform; while at the other Presidencies they leave the head of every department to be amenable for everything relating to themselves, except *orders;* which is decidedly the most advisable plan to lessen expense, facilitate business, and give greater security.

The number of secretaries, and their various occupations under the name of accountants and joint secretary, would have their business lessened, and might become not so necessary, when the military Auditor-general has the examination of the accounts of the Commissariat, engineers, &c. relating to money matters, and the Commissary-general his own returns. This I imagine would be the most advantageous for Government, rendering officers responsible under proper assurance; besides, as it exists at present it is a species of anomaly, for an officer of the rank of Colonel, at the head of such an immense department as the Commissariat, or of any of the other great departments, to be in fact subject to the check and control of any of the secretaries to the Military Board, who may be a Captain in the army, who takes no oath, while the Auditor-general does, when auditing contingencies hardly more extensive. The same remark applies in this place as to the agencies*, on the score of the complicated mode of keeping accounts. The consequence is the unavoidable evil of arrears.

The agents pay themselves and the whole amount of their agencies, being subject to the examination of *one of the secretaries* of the Military Board, though the Board are *ostensibly* the controllers. But how is it possible that the Board can do justice to the Government, when two of its members, the Adjutant and Quarter Master-generals, are almost always absent on tours, and the other members have abundance to engage them in their own line: for instance, the commandant of artillery lives at Dum Dum; the chief engineer has much to attend to; and the Auditor-general must be fully occupied with his own business, if he attends to it properly. Consequently the authority falls into the hands of a Secretary, who conducts the whole in the name of the Board, and is an *irresponsible* person, the Board being a body, and he merely their organ for communication.

The audit officer is consequently completely relieved from the most arduous and difficult part of his business, that of auditing the contingent accounts of the departments of the greatest expenditure, viz. the Commissariat, Ordnance, Manufactory of Gun-carriage and Gunpowder, the whole of the Building department, called the Department of Public Works, and Stud, both horses and cattle, and Barrack department; in short, every department in Bengal appears under the control of the Military Board, who both *order* the expenditure and audit the accounts. The result therefore of this accumulation of business into the hands of almost one person must be clear;—the public accounts fall into confusion, or must be made up by estimation; though nominally brought up annually at an additional charge for secretaries, assistants, and clerks in the office, of 58,000 rupees *per annum*†. If a further proof be required of the state of the accounts, I think it would be found on a reference to the supply of timber for the gun-carriage agency, though the accounts of that department are annually sent home as properly arranged. These objections, serious as they may appear, are not the only ones to this system from the want of simplification, which would prevent the subdividing the expenditure into so many heads and offices, that makes it next to impossible to collect and ascertain the real sums expended; for it mixes up the receipt and value of European stores with the outlay of cash in India; it therefore places in reality what check and control *exists* over these enormous sums, in the hands of a very few if not a single individual, who are required neither to take an oath nor give security.—I may be putting the case in a very strong light, but the fact suggests itself from a view of the difference of situation of the controllers of these departments, in reality to the extent of hundreds of lacs, being irresponsible; while the home authorities deemed it proper both that the Auditor-general and Commissary-general should be under

* Gun carriage and gunpowder.

† Engineer, &c. 15833 12
Ditto establishment 6272 9
Commissariat, &c. 24360 0
Secretary and Accountant 12000 0

58466 5

assurances, and that security is demanded from a Paymaster, whose outlay may be only from three to five thousand rupees *per mensem*. It certainly appeared to me, as a member of the Finance Committee, after a careful examination of the mode of conducting accounts and business, that it was confused, laborious and complicated.

No proposition can be made to substitute any system to rectify these inconveniences, except by a general reform that would relieve the Military Board from its overwhelming quantity of business, which arose probably from a supposed convenience of assembling the control of the different branches of the service into its own hands, that belonged to other departments; but a new system would, by distribution, regulate the duties by placing them under their proper heads: it would also make the chiefs of the several departments responsible for their own lines, and entirely divest the Military Board of the mixed and incompatible character and authority of both ordering the outlay of money, and the auditing of the expenditure ultimately.

There is one thing that I have not touched upon, which would, I should imagine, immediately attract the attention of the higher authorities, if the discussion of the power of this Board ever came under their notice. The opinions of the Military Board, as a congregated number of individuals, are allowed the weight of those of a body, and are, when sent to England, admitted as such, whether in cases of financial œconomy or as distantly affecting even discipline itself, and are sometimes opposed to those of the Government themselves; though in fact, when inquired into, they would prove to be the sentiments of single individuals. This could of course be illustrated by attending to the practice and decisions on the records of all the Military Boards at various times; but this defect in its constitution the Military Board at Calcutta has only in common with those established at Madras and Bombay.

In conclusion to these details upon a subject of such moment, it will probably be expected that some observations should follow on a step so intimately connected with the spirit of it, as the experimental measure of the abolition of this Board at Bombay.

As the question had been most deeply considered by the Honourable the Governor of that Presidency, and fully detailed in his several minutes, proposing the ceasing of the existence of that Board, at the same time that he afforded a clear exposition of its history and powers, I am led to imagine that a laboured description will prove less acceptable than a condensed statement of the arguments and reasons that influenced the dissolution of a Board of so old a date throughout India.

The Honourable Court themselves appear long since to have been inclined to the opinion, which seems to have been present to the mind of the Governor, and mainly to have been the primary cause of inducing him to effect what may certainly rather be considered a reformation of a system than the abolition of any particular functions exercised by the Board themselves, or their effective powers, by consigning the performance of their duties to individuals, accompanied by a certain degree of responsibility, which in a collective state was never direct and effectual on any one; the inconvenience of which was occasionally felt by Government, when a diversity of opinions was maintained.

I conceive, therefore, that the quoting of the above alluded-to sentiments expressed by the home authorities and the Honourable the Governor of Bombay will sufficiently elucidate the arguments on which so material a reform on the leading points of a great branch of the public service, as to responsibility, check and control, of all its principal departments, has been effected.

"Whether Boards are the fittest instruments either of improvement or control, and whether both objects might not be more effectually attained by individual agency,—it is a common but true observation, that responsibility is lessened by being divided; and there is, we believe, no doubt that more business can be done by the same numbers of persons acting separately than in conjunction.

"If the business is not divided, it can hardly fail of being impeded in its course by incompatible tempers, conflicting opinions, and the frequent occurrence of useless discussions.

"Nor do we overlook the consideration, that where great interests are *not* at stake, and important trusts are reposed, it is not always expedient that they should be committed to the intelligence and probity of a single individual, even under the check of subordinate functionaries: but we nevertheless think it deserving of mature consideration, upon which side the balance of advantage upon the whole preponderates *.

"No reasoning can more strictly apply than that which the Court of Directors have used on this occasion to the Military Board of this Presidency, which has had large, and I may add, in many cases, undefined duties allotted to it.

"It is the defect of offices, and one that grows with the multiplication of their labours, that attention to forms and to the exact fulfilment of their necessary and relative duties supersedes in a great degree the higher objects of their establishment.

"But in examining the subject closely, it will be found that as the army of this Presidency increased, the duties of the different heads of departments have increased to a degree that

* Honourable Court.

limited them more and more to particular lines, and made it almost impossible for them to give their attention to the general question that came before the Board.

" My conviction is, that the object will be frustrated and not forwarded by the multiplication of checks, forms and vouchers, and by everything that creates delays injurious to the service, while it lessens direct responsibility and prompt audit.

" This is not stated in derogation of the Military Board. It has been in my opinion a better course than if useless discussions and controversies had impeded its proceedings.

" The same observations apply in a great degree to the Chief Engineer and Commandant of Artillery, who having the sanction of the Board given to all their measures, become almost irresponsible heads of offices, instead of being directly amenable to Government for the conduct of their respective departments *."

These, and many other reasons of equal cogency, are stated by the Honourable the Governor, for the adoption of a measure so replete with efficiency for the separate and effectual working of so great a machine, the connection of the several parts of which with each other was maintained by no apparent necessity, as each of the individuals was the head of some principal corps or great department, who in his own line had abundance to occupy both his mind and his time, without forming one of a body, which when assembled could outvote him on any given subject that he perhaps was solely qualified to judge of, and might also afterwards be made responsible for the execution of a measure he had decidedly disapproved of. At any rate, supposing the case to be reversed, and that a mutual confidence and reliance in each other's talents and information subsisted amongst the members, inconconvenience still arises, particularly to the higher authorities; the *Board* then acquiesce in or devolve their collective duty of decision on one person, whose single opinion is to be presented to their superiors with the force of that of an assembled body. The argument goes further; for the Board being composed of the heads of departments and corps, has a consequence from its constitution that is on many grounds objectionable. Its opinions on every subject, and sometimes on military points of importance, are occasionally opposed to those of Government, and even to those of its President, the Commander-in-chief. Such collision, if the expression be admitted, must, in the forcible language of the Honourable the Governor, have the effect of placing Government in the situation which exposes it to the dilemma of an apparent difference of opinion, on a military question, with a Board composed of all the principal military staff of the army, with the Commander-in-Chief as its President, "who again in his turn," as the Honourable the Governor observes, it would "be unseemly to have in frequent controversy with his own staff; and it is adverse to the principle on which the Board is constituted, to have any of its members act in a spirit of deference to the President," and exhibit the anomalous consequences of the head of the army being held in opposition of sentiment to his own immediate general staff and confidential advisers.

It may be now requisite to afford a short sketch of the distinct manner in which the performance of the duties of the Military Board is provided for, by ascribing to each officer the relative duties of his own department or corps, pointing out the channel of communication with the ultimate authority and the controlling superintendence the officers themselves have over the transactions of their own lines of service, for the due and correct attainment of which they are held directly responsible to the Government. The Honourable the Governor then proceeds to state:—

" The Quarter-master-general and Adjutant-general are officers of his (the Commander-in-Chief's) staffs, and liable from his visit to the different stations of the army to be frequently absent from the Presidency.

" Not only the heads, but the different branches of the service will have their character associated with the success of a system which reposes a confidence which cannot be abused by an individual, without in some degree implicating the branch of the army to which he belongs.

By the late orders of Government, the Commissary-general is unfettered as far as regards his detail duties, and vested with authority for conducting his own department, the supplementary regulations for that officer's guidance, as regards the making of all supplies.

" The Commandant of Artillery might be vested with authority to control all matters connected with the ordnance department, exercising his power over the grand arsenal, gun-carriages, and gunpowder departments, holding himself responsible to Government for regulating everything connected therewith.

" The Chief Engineer in like manner, and upon the same principle, might be vested with authority for controlling all matters connected with estimates for buildings, repairs, &c.

" The Auditor-general to be responsible to Government for conducting matters connected with the contingent expenditure; and he may forward his contingent lists to that authority direct, instead of laying them, as he has hitherto done, before the Military Board.

" The Quarter-master-general also may be invested with authority for regulating (under the orders of His Excellency the Commander-in-chief) everything connected with his and the barrack departments, for the purpose of being submitted to Government.

" Such responsibility being established, all the correspondence and vouchers now received at

* Honourable the Governor.

the Military Board would be thrown into direct channels, and nothing would remain but the audit and account department of stores, which could be better performed by a deputy secretary and auditor of ordnance returns and stores, subordinate to the Secretary to Government in the military department."

Exclusive of these considerations, the objects for which the Military Board was originally constituted have in a great degree ceased, or its powers of action become so overloaded by the increase of business, from circumstances and events that could not be held even in remote contemplation of possible occurrence, that it must gradually have sunk into a mere Board of examination of detail, or have enlarged into the unwieldy size and unmanageable state of the one in Bengal.

To conclude this head without noticing the Military Board at Madras may be looked upon as a kind of omission, particularly as the Government of that Presidency entrusts a very large portion of authority to that body, as far as regards superintending and regulating the departments of the army. But as the system upon which it proceeds is strictly similar to that of Bombay, no distinct description, it is obvious, can be required, beyond that of describing it as such, except the necessity that arises of alluding to the evils connected with its mode of procedure being the same as those pointed out as existing in the one at Bombay, and originating from the same causes: for instance, there is no want on their records of examples of diversity of opinion with their superiors; and the home authorities have more than once complained of the decided influence of a single individual being so powerful that it called for their marked observation. I imagine therefore that nothing more need be said on this topic on the score of efficiency, though it may be added that it must be clearly seen that œconomy is the result of the introduction of such a reform.

Ordnance Department.

The principle of the systems must of course be the same under all the Presidencies for the conduct of this very important department, particularly as to receiving their Europe supplies from the Honourable Court, and the country ones from the Commissariat; and the only difference seems to arise as to the strength and classes of the commissioned and warrant officers. At Bombay it may seem to be carried on in every point of view on the most œconomical footing; and I have every reason to conclude as efficiently as at the sister Presidencies, if we are to judge from the past experience of the ease with which it moved its artillery during the wars of the last twenty-five years, and the total absence of complaint, both as to the efficiency of the corps and its ordnance. I am perfectly convinced from what I have seen of the gun-carriages of the three Presidencies, that those prepared at Bombay might court a comparison, though I suspect the Madras horse artillery appointments, on the score of harness, &c., are superior, and more expensive.

The judicious arrangements originally established in the Bombay ordnance line, and the recent revisions, which will subsequently be noticed, where multiplied duties are performed with fewer hands or smaller establishments,—on a comparative view must be as evident, as that it is the lowness of wages, in many instances, that makes the establishments, in Bengal in particular, look so small in amount of cash, although in point of fact the number is greater. But as their naval departments are trifling in comparison with those of Bombay, the current duties must consequently be less arduous, with an office establishment in Bengal nearly three times that of the other Presidencies, which proves the fact as above stated.

The arsenal at Bombay, besides its usual routine of duties, has the ships of His Majesty's navy and the Indian navy to provide for.

The other Presidencies have commissaries abundantly distributed for the purpose of their Presidency work and its vicinity; so that their greatest duty at head-quarters, perhaps, is the dispatching of the stores to the subordinates, and receiving supplies from England.

The Madras arsenal may be free from the heavy dispatch of gun-carriages, which appear to be sent direct to the different stations from Seringapatam, or the making up of light cartridges. The arsenal of Fort William has nothing to do with making light cartridges, or taking care of the camp equipage of the native corps, which latter forms a distinct duty on the Bombay establishment. It may therefore appear, notwithstanding the different size of the armies, that the head-quarters of the smallest Presidency has as much if not more duties to perform with less aid.

The constitution of this department did vary from those of the other Presidencies, in as far as related to classing of conductors, who were eligible to become deputy assistant and deputy assistant commissary, which was not allowed at Bombay, where artillery officers were in charge of small depôts. This latter plan is certainly a saving to Government in every point of view: the late orders of the Bombay Government reorganized these points, with regard to efficiency, as well as to reward the service of deserving conductors.

The magazines at Madras of any importance, seldom have less than three, and sometimes five, while in Bengal there are three, and in some places ten: for instance, the depôt of Allahabad has eleven conductors, Cawnpore six, Dinnapore three, Agra four, Dhelhie eight; while at Madras there are three for the Hyderabad force, three at Jeulna, five at Nagpore,

four at Dooat, three at Bellary, and five at Banglore; but at Bombay there are two at Poona, and at every other force or depôt one only. This forms a very material difference in point of labour. It is also necessary to observe, that when a conductor proceeds in charge of stores in Bengal, he is allowed twenty rupees per month for stationery, and (thirty) for a horse; but he receives nothing at Madras under this latter head, but has it consolidated with his batta; and at Bombay nothing. At the two latter Presidencies the conductors draw a tent from the public stores when detached on service only, which is the most expensive plan, and may be urged as giving a favourable appearance for Bombay: the allowances at the two other Presidencies were and are still higher to every class of warrant officers; but singular to remark, they are not the same in any two of the Presideneies, although the duties are precisely the same. These plain observations suggested themselves as requisite for contrast, previously to entering upon the description of the late revisions at Bombay, which I shall now introduce as explanatory of a system well adapted to promote regularity, and establishing that efficiency at all the Presidencies which must be the grand and principal object of all regulation.

The Honourable the Governor then exhibits the following view of the subject:—"It is one of great, and often unnoticed, and I may almost add, unchecked expenditure. Under common circumstances it is difficult to preserve complete checks over this branch without apparent hazard to military efficiency; and the recent military occupation of extended territories, the formation and abandonment of cantonments, the charges of depôts and recurring emergencies, have combined at this Presidency to create difficulties and increase expense in this important department: it was specially under the Military Board; and assuredly there was neither want of zeal or talent in those of whom that Board was constituted; but there was a want of leisure in the majority to devote that minute attention to this branch of the service which it so peculiarly demands, and to make from time to time those modifications which were required; while those upon whom that charge more particularly devolved, had not the same motives of action which must influence them when they have individual responsibility, and when they have to expect all that praise or censure of Government which awaits their active or negligent performance of their duty.

"I have no desire to make further comment on what is past: if there were errors, they belonged to the system, not to individuals. But a period is now arrived when we have more leisure for revision, and when we are comparatively called upon by the state of our finances to make every possible reduction.

"I have, in my different tours through the territories of Bombay, visited and inspected almost every arsenal and depôt. I have not only had recent reference to the records of the Military Board, but have examined the numerous details connected with every part of the subject. The reduction and revisions I propose are not new. In a letter from Mr. Newnham (then chief Secretary) to the Commander-in-Chief, under date 3rd April 1824, I find almost everything I have recommended was in the contemplation of Government. Why the measures suggested were not carried into effect at that period, need not now be inquired into. I can well suppose, from what I have experienced, all the difficulties with which they were surrounded.

"In fact, the more the subject is considered, the more desirable appears the entire re-organization of the ordnance store department, as well in the distribution of the arsenals and depôts of stores, as in the different establishments connected with them.

"The following is the present distribution of arsenals and depôts.

Principal Arsenals.	Subordinate Depôts.
Bombay . . .	Tannah, Bhewney, } Supplies sent as required by the troops.
Bhooj . . .	None.
Surat . . .	Kaira and Hursole.
Baroda . . .	Deesa, Rajcote.
Poona . . .	Ahmednuggur, Malligaum and Asseerghur, Sholapore, Sattara.
Severndroog .	Vingorla, Viziadroog, and other minor depôts in the Southern Concan.

"Since the above distribution was fixed, circumstances have so totally changed in the position of the troops and departments requiring supplies of stores from the arsenals, that preserving this distribution of them would in many cases be attended with a real increase of expenditure, both in the carriage of stores and in their establishments. I would suggest the following distributions.

Principal Arsenals.	Subordinate Depôts of Stores proportionate to the demands of each Station.
Bombay . . .	The station in the Northern and Southern Concan supplied by Indent from the Presidency arsenal. Reserve ammunition to be kept at Severndroog for the troops in the Southern Concan.

	Principal Arsenals.	Subordinate Depôts of Stores proportionate to the demands of each Station	
Northern Division.	Ahmedabad.	Baroda, Hursole, Deesa, Rajcote,	Depôts for reserve ammunition.
		Surat.	A small supply of reserve store and ammunition, an entrepôt for Asseerghur and Malligaum from Bombay.
Poona Division.	Ahmednuggur.	Poona, Malligaum, Sholapore,	A small supply of reserve and ammunition for the supply of the troops at the station.
		Sattara,	Reserve ammunition.
Southern Division.	Belgaum . .	Darwar, Vingorla,	As an entrepôt to Belgaum and a small supply for the troops at the station.

"Besides the above, I would propose that the depôt at Booj be kept up, though on a very reduced scale. In Guzerat, Broach has been abolished. The establishments may be divided as follows:—

Commissioned officer.	Corps of Store Lascars.
Warrant officer.	Permanent artificers.

"The commissioned officers are at present as follows:—

Bombay grand Arsenal.	One Senior Commissary of Stores. One Senior Deputy Commissary of Stores. One Junior Deputy Commissary of Stores.
Surat Division.	One Commissary of Stores.
Poona Division.	One Commissary of Stores. One Deputy Commissary of Stores.
Southern Concan.	A Subaltern of Artillery on Deputy Commissary allowances.

"If to this establishment be added that required for Belgaum, there will be no less than five commissaries of stores, and four deputy commissaries of stores; whereas by the distribution of arsenals which I have proposed, there will be, including Belgaum only, four commissaries of stores, and four deputy commissaries of stores, with a corresponding reduction in all the other branches of the ordnance establishment, as follows:—

Bombay.	One Commissary of Stores. One Senior Deputy Commissary of Stores. One Junior Deputy Commissary of Stores.
Northern Division.	One Commissary of Stores. One Deputy Commissary of Stores.
Poona Division.	One Commissary of Stores. One Deputy Commissary of Stores.
Southern Division.	One Commissary of Stores.

"The subject of the low rates of staff allowances at present received by the officers of the ordnance department has been brought under consideration by the Commandant of Artillery, who has suggested that they should be made in some degree proportional to the responsibility incurred; and that these officers should be placed more upon an equality with those of Bengal and Madras, and with officers of the General Commissariat of this Presidency, the pay at present being as follows:—

Commissary of Stores, Bombay	Rupees	833	1 33
Senior Deputy Commissary of Stores, Bombay and outstation Commissaries		400	0 0
Deputy Commissary of Stores		200	0 0

"The classification proposed by the Commandant of Artillery is as follows:—

Senior Commissary of Stores	Rupees 1000
First Class Commissary	650
Second Class Commissary	450
Deputy Commissary	250

"Without at present going further into the plan proposed by the Commandant of Artillery, I may observe that in so limited a department as this, it does not appear desirable to divide the officers into so many classes. It may however be observed, that until very lately the pay of the senior commissary was nearly what is proposed by the Commandant of Artillery, but was reduced to the present amount by the abolition of the off-reckonings previously drawn by the senior commissary of stores, as commandant of the corps of Store Lascars. The new arrangement involves a greater degree of responsibility and trouble than at present, a responsibility which under the improved system of control lately established, will be felt to be real and immediate.

Upon these grounds, therefore, no less than that of placing full ordnance commissaries under this Presidency more upon an equality with those holding inferior charges in the same department at Bengal and Madras, and also with the assistants in the General Commissariat, I conceive the representation of the Commandant of Artillery to merit attention, although the classification and rates of pay which he proposes may not be approved of to their full extent.

" The officers in the ordnance stores department are collectively entrusted with public stores and dead stock, amounting to about rupees 102,59,469*, and they conduct the issue and expenditure of them to the average amount of about rupees 65,7,192† annually, besides disbursement in their own departments for artificers, and in other departments for country articles to a considerable extent. When all these circumstances are considered, I do not think the present rates of pay at all adequate; they are much below those of the other Presidencies holding similar charges, with less responsibility.

" In all departments having an extensive dead stock in charge, frequent changes and removal should as much as possible be guarded against,—a consideration which strengthens the argument in favour of a small increase to the present pay of ordnance commissaries, whose situation should be made so permanent as to remove the probability of an officer's relinquishing his appointment at any time for a temporary command, to which by seniority they so frequently become entitled, by which the service would be deprived of the valuable aid of officers, in a department which, above all others, requires the professional qualification of a vigilant and experienced superintendant.

" I would therefore propose as follows:—

Senior Commissary of Stores	Rupees 1,000
Senior Deputy at Bombay, and outstation Commissary of Stores	500
Deputy Commissaries of Stores	250

Which classification gives to each a similar proportion of allowances to that of the present system, the subordinates being paid respectively one half and one fourth of the pay of the senior. And as the duty and the interest of a responsible officer should never be placed at variance, I further suggest, that full batta at all times should be given to the full commissaries in Guzerat and the Deccan, who are constantly liable to sudden unexpected calls to attend the divisional commanding officer, the Commandant of Artillery, and the inspecting field officer of artillery in the province, in their inspection of the widely scattered depôts of those divisions, besides making tours of private inspection at other times themselves.

" It has been fully ascertained that the half batta granted to these officers whilst thus detached is not sufficient to pay for their divided establishment, so that their travelling expenses at present fall on their personal allowances; and it can be no matter of surprise if in this case the chief object of such periodical visits of an ordnance commissary should be defeated by the anxiety he cannot but feel to return to his station.

" To such visits of inspection, as much as to anything else that can be devised, must we look for a high degree of efficiency in all the subordinate departments, combined with the exercise of the most rigid œconomy; the absence of which, if observable heretofore, must be traced more to the defect of the system than in the character of the individual. For the inspecting field officer of artillery in the province will personally inspect the whole of the depôts annually, and exercise a general control over their expenditure.

" The increase of expense attending the measure I have proposed will be more than covered by the reorganization of the other branches of the ordnance establishments, as will presently be shown; but the measure rests on its own merits. And though there may not perhaps be any one item of saving attending it at first sight visible, I do not hesitate to assert my belief, that independently of the equity of the arrangement, in the operation of the system it will be found not only efficient but most œconomical to Government.

" The visits of the full commissaries to his subordinate stations should be strictly obligatory, and when practicable once a quarter; and confidential reports of the actual state of these depôts should be made to the Commandant of Artillery, which will secure Government against those losses to which it has hitherto, and may hereafter continue subject, from the youth and inexperience of officers in charge, unless this measure is adopted and strictly enforced.

" The next subject for consideration is the establishment of warrant officers for the ordnance department. These at present consist of

19 Conductors, on rupees 90 each;—24 Sub-Conductors, rupees 40 each.

" There can be no question about the necessity of securing men of respectability of character and qualification for the situation of warrant officers in the ordnance department; for the best system and the most judicious arrangement of a commissary would be thrown away unless fol-

* Balance in hand 1828–29.

† Expended in 1826–27 rupees 573,837,2,13
1827–28 rupees 745,867,1,60
1828–29 rupees 651,872,3,31
As per Records in Military Board's Office.

lowed up by those who form the connecting link between the superior and his establishment, and nothing should be omitted that would tend to excite them to perseverance in a uniform course of diligence and integrity. They are frequently left in temporary charge of depôts, where they are required to keep the accounts and to act to a great extent as a commissioned ordnance commissary; whilst their present rank and pay afford no security for those qualifications which the public service expect from them.

" The Commandant of Artillery proposes to create a superior class of warrant officers, under the designation of 'Deputy Assistant Commissary of Ordnance,' to divide the conductor into two distinct classes, and to raise the pay of the whole as follows:

Deputy Assistant Commissary . . .	Rupees 275	(above Lieut.)
1st Class Conductor	200	(above Ensigns.)
2nd Class Conductor	120	E. F.
Sub-Conductor	85	

" Besides the serious objection to raising this class of men upon an equality, with and even above, the commissioned officers of the army, whose mode of living and situation in life are so different, and the inexpediency of entailing such an increase of expense in the present state of our financial embarrassments, I should consider the class of men who rise to these situations amply rewarded by a more moderate scale of allowances. I would therefore propose a classification of the warrant officers of the following kind, the aggregate of whose pay will be somewhat less than that at present drawn by the whole body.

	Garrison.	Field.
3 Deputy Assistant Commissaries of Ordnance . . Rupees	150	225
6 Senior Conductors (as at present).	90	Field Batta
9 Junior Conductors (not affecting present incumbents) . .	70	as at
24 Sub-Conductors (as at present)	40	present.

" For the greater efficiency of these classes, I would propose that the qualification of the highest rank be fixed in such a manner as would exclude all but those of the first qualifications of real merit and of intelligence, from amongst the class of conductors; and that in future all warrant officers on their first nomination to the department be required to attend the artillery depôt of instructions, to complete their qualification for office.

" The director of the depôt might also be required to prepare a course of such practical instructions for the sanction of Government, to be forwarded by the Commandant of Artillery to His Excellency the Commander-in-Chief.

" I come next to the corps of Store Lascars, which consists of nine companies, attached to the arsenal, and one complete company belonging to the establishment of the gun-carriage manufactory, as follows:—

Attached to Arsenals.	Gun Carriage Manufactory.	Total Strength.	Rank.	Present Garrison Monthly Pay.
9	1	10	Syrangs . .	24 2 0
27	3	30	1st Tindals.	10 2 0
27	3	30	2nd Tindals	8 3 0
603	70	673	Lascars. . .	7 0 0
5	1	6	Bheesties. .	7 2 85

" The object of burthening the state with fixed establishments of any kind is eventually to secure the more efficient and faithful performance of the duties required from them; and so long, and so long only, as these ends are secured, does it consist with sound policy to retain them.

" But in a case like the present, this must depend on the nature of the works and the degree of instruction and experience required in those who have to perform. Cases may also occur, where from local causes it is more œconomical to employ Store Lascars than labourers. It is only necessary, in order to show this, to advert to the case of the gun-carriage manufactory at Bombay in the year 1816–17, whose expenses were actually diminished more than ten thousand rupees annually, by the augmentation of the detail of Store Lascars attached to it, to a complete company; and the consequent discharge of the Nowgunnies or bamboo Coolies.

" Reductions therefore in this branch should be approached with considerable caution, or they may be found eventually to involve increase of expense to Government: and I confess that were the present widely scattered state of the arsenals under this Presidency to remain unaltered, I should have great hesitation in proposing any material change in the establishment of Store Lascars. I feel assured that the reduction of one third of the present strength of the corps of Store Lascars, and three fourths of the permanent establishment of artificers, may be effected without impairing the efficiency of this branch of the service.

" It may be objected that the peculiar nature of the work carried on in arsenals, requires previous instruction and experience, which it would be unsafe to entrust to the ignorant day-

labourer taken from the town or bazar for the occasion;—that packing and transporting ordnance stores, and other military equipments, render an establishment of Store Lascars and artificers not merely necessary, but even the most œconomical.

" I mean to leave the principal depôts, where the work above described is chiefly carried on, with such an establishment as would in this respect preserve them efficient; whilst all inferior and subordinate stations are reduced to a scale more proportionate to the limited nature of the work, which under the new system will devolve upon them.

" The proposal for the revised distribution of arsenals being adopted, I would reduce the nine companies of Store Lascars attached to arsenals to six; and considering the diminished demands on the gun-carriage manufactory, those belonging to its establishment to the number shown in the annexed table of fixed artificers, allowing the supernumeraries to be absorbed by vacancies.

" The issue of clothing to the whole corps to be biennial, instead of annual as at present. No batta to be allowed except when actually marching, or in the field. And observing a just distinction in this as in all other points between those who are actually fighting men and such as come more under the character of followers or artificers, I would reduce their pension as follows:

Those of 20 years' service, and not reaching 25 years, half-pay.
25 ditto ditto 30 years, two-thirds pay.
30 years and upwards three-fourths pay; leaving cases of wounds or other extraordinary claims in the service, to form subjects of the special consideration of Government. And further, I would effect a classification throughout the corps of Store Lascars as follows:—

Rank.	Class.	Period of Service.	Proposed Monthly Pay.	Present Monthly Pay.
Syrangs . .	1	After 10 years' service as Syrangs .	26 0 0	24 2 0
	2	After 6 ditto ditto . . .	24 0 0	
	3	Under 6 ditto ditto . . .	22 0 0	
1st Tindals.	1	After 10 years' service as 1st Tindal .	11 0 0	10 2 0
	2	After 6 ditto ditto . . .	10 0 0	
	3	Under 6 ditto ditto . . .	9 2 0	
2nd Tindals	1	After 10 years' service as 2nd Tindal	9 0 0	8 3 0
	2	After 6 ditto ditto . . .	8 2 0	
	3	Under 6 ditto ditto . . .	8 0 0	
Lascars. . .	1	After 10 years' service	7 0 0	7 0 0
	2	Under 10 ditto	6 0 0	
Bheesties. .	..	. . . . .	7 1 24	7 2 48

" The aggregate saving effected by this classification alone amounts annually to rupees 3,309. With the present strength, and on the absorption of the supernumeraries and the decrease of the charge of clothing, it will amount as follows:—

To pay, *per annum* . . . . . Rupees	20,783 2 20
Clothing of supernumeraries	1,718 2 20
Biennial clothing and annually to reduced establishment	1,718 2 20
About rupees, *per annum*	24,220 2 60

Not including the saving on the reduction in the Lascars of the gun-carriage department, about 2000 rupees annually.

" But the principal object gained in this classification is, that of holding out inducements to all ranks to remain in the service from the prospect of increase of pay in each rank, which will tend to check the disposition felt by many, on attaining a certain rank, to retire on their pension upon the frivolous or ill-grounded complaint of infirmity or superannuation.

" The extra pay to each class should be considered 'working pay.' To be withheld on a certificate against a man's name in the muster roll, bearing the signature of the commissioned officer in charge of the department, showing his misconduct, indolence, or incapacity.

" I am borne out in this belief from the experience obtained in the corps of royal sappers and miners, and of the royal artificers in England, where this system in a modified degree obtains, and has been found to realize the objects proposed from its adoption.

" The only remaining branch of the subject requiring consideration is that of the permanent establishment of artificers for arsenals and depôts of stores.

" The existing proportion was fixed by Government in general orders on the 28th of February 1828, merely under the supposition that each depôt was to depend chiefly, if not solely, for its resources upon its own means. I have made myself acquainted with the resources of every military station, and I am quite satisfied that besides other advantages, this measure will give an encouragement to mechanics of every description, that will tend generally to the improvement of the useful arts throughout our provinces. I conceive, however, the present tran-

quil state of the country, and the reduction of other establishments, have left the principal stations abundantly supplied with all the ordinary kind of artificers, such as carpenters, smiths, tailors, &c. And that an establishment of such workmen need no longer be kept up, excepting in the field or in such peculiar situations as can be made special exceptions to the general rule, I would therefore reduce all the establishments in the ordnance department down to the very lowest scale, merely retaining mestries as responsible men attached to each arsenal, leaving others to be taken up as occasion may require upon sanctioned estimates: and should this reduction be found on trial to be attended at any particular station with inconvenience to the service, the present system can at any time be partially restored on a special representation to Government, the necessity for which however I do not anticipate.

"I am borne out in my conviction of the practicability of this system, from the fact, that throughout the whole of the executive engineer departments, there are no permanent artificers kept up, with the exception of mestries or head men of each kind, by whom work-people are entertained whenever repairs or other work may require their assistance, and no difficulty has yet been experienced in those departments from the operation of this system.

"Profiting therefore by this experiment, the adoption of a similar system in the ordnance department may be attempted with the solitary exception of the gun-carriage manufactory, where considerable previous instruction is necessary to make expert workmen. The particular allotment of artificers for each arsenal may be entrusted to the discretion of the Commandant of Artillery.

"Until the year 1827 there does not appear to have been any regularly fixed proportion of reserve ordnance for the out-stations of this Presidency, which were up to that period supplied as circumstances seemed to require it, at the discretion of officers selected for particular commands; and on the termination of the service for which these stores were required, they were lodged generally in the most convenient arsenal. In the year 1827, however, a proportion of reserve ordnance was framed by the late Commander-in-Chief, and received the sanction of Government.

"From a review of existing political relations, however, I have no hesitation in stating my feelings, in which I have the concurrence of His Excellency the Commander-in-Chief, that this proportion may be considerably reduced with advantage to the service and with regard to the change of arsenals and depôts. It is my opinion that no immediate expense need be incurred in the removal of surplus ordnance from any station where it may no longer be required, merely on the ground of fulfilling the objects of the new distribution. Gun-carriages, for instance, had better for the present remain where they have cover than be brought where there is none, and expenses incurred in erecting sheds, for which there is no urgent necessity; but I should observe to refer the subject of gradually carrying into execution the charges in the proportion of reserve ordnance to His Excellency the Commander-in-Chief.

"The only use of this fixed proportion of stores being to regulate out-station commissaries of ordnance in their demands for annual supplies of stores from the grand arsenal at the Presidency, and from the local Commissariat, the Commandant of Artillery may be instructed to prepare a revised proportion of stores for the sanction of Government, framed upon the new distribution of arsenals now proposed*."

This full development of the reorganization of this department requires no comments, and therefore leads me to another part of the question, in which no scientific knowledge is requisite, though much attention is necessary to provide and superintend those employed in the line;—as

Ordnance Drivers

which are certainly in peace time a most unnecessary expense, and to retain a large establishment on the pay and immunities of fighting men, as an annual permanent outlay, is carrying the notion of efficiency to an extravagant length:—their clothing alone costs a large sum. Few things are better understood than the common art of driving a pair of bullocks in India; or where there is greater abundance of that class of persons, whom the usual pay of the Government always commands; and the necessity of retaining an organized body of this description cannot be defended at so heavy an expense, on the plea of their being disciplined; for they neither can nor do drive a bit better than the common cart drivers, from whom indeed they are recruited. Besides, their pay, exclusive of other contingencies, is only half a rupee less than that of a regular soldier at Madras: and under this impression it might be abolishe dwith great propriety and saving to the State.

I think the retaining of mules for foot artillery has been proved inefficient, as the experiment was tried at Bombay by Sir Charles Colville, who expected these animals from Persia to be equal to those of Spain, which they are in their natural qualities of hardihood and pace, but not in point of size, to afford a counter-balancing weight to the guns they draw; for it is well known that light cattle are unequal to heavy weights. There is another objection to them; not being natives of India, they cannot be replaced on field service, and in times of peace they are two

* The Tables of Practice Ammunition, &c. will be found in the Appendix.

thirds as expensive as a horse, without his strength and activity, and but a little better than good draft bullocks of the country. Hardly any circumstances can warrant keeping up these foreign cattle, especially as in all the past warfare in India, bullocks have answered every common purpose for foot artillery, and will continue to do so, no doubt, in future. If any aid is required, cart-horses, and the common coarse ones of the country that are not sufficiently active for cavalry, would supply every defect of the bullock.

It appears by an official statement at Bombay, that allowing the proportionate numbers of horses, mules, and bullocks for a light six-pounder, the expense was as follows:—

Pay and clothing to artillery-men, grain and forage, syees, harness, head and heel rope, remount of six horses in draft, and one spare monthly	235	0	0
Expense as above for nine mules	222	1	66
Expense of twelve bullocks hired	96	0	0

It is therefore evident that mules are 126 rupees per month dearer than bullocks, besides their original cost of 250 rupees each; and that horses are 12 rupees 2 annas dearer than mules, and 139 dearer than bullocks. That the plan has fallen into disuse is not to be wondered at; for there are few things on the head of military equipments which should be more carefully studied than the idea of procuring and adapting the productions and animals of a country to every possible military purpose. Our peculiar situation in India points out the necessity of this measure more than may be requisite in regard to other states; for where is there so great a variety of people, surface of country, and various kinds of animals adapted, sometimes only to particular situations, and indeed districts? for instance, in a warfare in Malabar, horses are little required, and camels quite useless:—but how different is the case when we approach the arid deserts of the north-western frontier of Mewar, and the bank of the Indias!

The heavy guns and light field-pieces at Madras and Bombay are in charge of the officers of artillery at the several stations, and the ordnance stores under the charge of the commissary of stores, who of course has the station magazine also under him; while at Bengal, separate and expensive establishments, under the denomination of the light field batteries, are retained, which, except to relieve the artillery officers of their proper duties, it is difficult to understand the superior use of, and could with great propriety be dispensed with as a superfluous expense.

It appears that an organized corps of artificers is retained at Madras at a permanent expense, the necessity for which is difficult to be explained; while the other Presidencies provide artificers equally skilful at the ordinary rates paid by Government, without any institutions of such a nature.

Practice Ammunition.

A singular difference is observable relative to a subject that one would suppose it almost impossible that any could exist in; for it appears by the late orders, that all the Presidencies, notwithstanding the trouble that has been taken upon this score, are not alike; and that the proportion of ammunition for annual practice, though reduced for the several descriptions of troops, still requires to be regulated, though one rule should prevail for consistency sake. That this is practicable must follow, and will eventually lead, from the introduction of a regular plan, to decrease of expenditure, there can be no doubt, as the annexed statement will prove; for the number of cartridges allowed, as well as the quantity of powder for their making, are not the same everywhere. The strength of the powder may have something to do with this dissimilarity, and a smaller or larger quantity being necessary for a cartridge; but this circumstance is a further reason how necessary alteration is.

The regiments in Bengal and Madras themselves make up their own light cartridges, by receiving all the requisite materials for that purpose from the public stores, the expense of which, added to the Quarter-master's establishments returned to make them up, must swell the expense where there are ordnance depôts, whose permanent establishment ought easily to do that work, as they prepare the ball cartridges: for instance, one set of formers, knives, and measures, will answer the ordnance department to make up light cartridges for 10,000 men; whereas every regiment, company, or troop, making up their own cartridges, must have a separate set, without adverting to the waste of paper, powder, wax, cloth, &c. In all this subordinate state there can be no œconomy, but this duty is exacted by the Bombay Government of the store department; and the custom in Bengal of granting 45 rupees per annum to each corps for targets can hardly be any saving, but on the contrary may prove more expensive.

Description of Troops.	Bengal.			Madras.			Bombay.			Quantity of Powder for Light Cartridges.			Remarks.
	Ball.	Light	Flints.	Ball.	Light	Flints.	Ball.	Light	Flints.	Drams. Bengal.	Drams. Madras.	Drams. Bombay.	
Horse Artillery . .	20	60	5	20	110	13	30	80	7	6	4	8	Musket.
Dragoons	20	60	5	20	110	13	30	80	7	4	0	0	Fusil.
Native Cavalry . .	20	60	5	20	110	13	30	80	7	3	2	0	Pistol.
Light Infantry . .	50	100	9	60	140	20	0	0	0	0	0	0	
Foot Artillery . .	10	17	2	36	110	14	30	80	7	0	0	0	
European Infantry	30	80	6	36	110	14	30	80	7	0	0	0	
Native Infantry.	30	80	6	36	110	14	30	80	7	0	0	0	
Sappers	10	17	2	0	0	0	0	0	0	0	0	0	
Pioneers	10	17	2	0	0	0	0	0	0	0	0	0	
Extra or local Corps	24	60	5	36	110	14	30	80	7	0	0	0	
1 Horse Artillery.	..	..	..	Discretionary with the Com. of Artillery.			Discretionary with the Com. of Artillery						
Foot Artillery. .	..	..	..										

Gun-Carriage Department.

The system in Bengal is, that the Commissariat have a distinct agent for this branch, to superintend a depôt and provide a supply of seasoned timber for it; at the same time that the agent retains establishments and incurs all other charges, under the direction of the Military Board, who control and audit the expenditure.

At Madras the same rule obtains as is in practice at Bombay, except that at the latter place they receive the supply of timber from the Indian navy, who have a naval yard. This would be difficult to be practised at the other Presidencies, as they have timber depôts, but no Government naval ones. There can be very little doubt, amongst other changes lately introduced under the Presidency at Bombay, that the one of transferring the construction of barrack furniture to the Commissariat (which has it made up by contract) has reduced the permanent establishments to the lowest scale; relieving the gun-carriage department of extraneous work, and making the Indian navy the proper department, as a repository for the timber and plank, instead of the Commissariat. This is not only the most efficient mode when compared with any other pursued at the other establishments, but unquestionably the most œconomical.

The subject of expense or outlay of the gun-carriage department cannot be discussed,—nor is it, I presume, expected,—as the wants and exigencies of the State must necessarily determine that question; though we must not overlook either the taste or ingenuity of the artillery officers, who have for the last twenty-four years conducted that important department, in the alterations and the adaption of the means of the country to the construction of gun-carriages. A particular instance of this kind occurred in the construction of the cars, &c. for the rocket troop, and the numerous and expensive experiments that have been practised in Bengal. There is no line connected with the effective state of the army, except the gunpowder, that ought to have more intense interest directed to it for its encouragement and improvement than this one: and few artillery yards have had more attention paid to them by their superintendants on this important object than that at Bombay; as I can confidently refer to the improvements, as I above stated, relating to the cars and carriages for the rocket establishment, when that invention was first introduced here. The only thing left therefore to remark as a proposition is, that each Presidency should apply that close and unremitting attention to keeping the charges for permanent establishments as low as practicable, that the price of the materials should become moderate, and particularly that no more than the number of gun-carriages absolutely required to replace worn-out ones, should be constructed. This proposal I conceive, looking forward to a long period of tranquillity, is not pressing the subject too much; for whatever view of the question is taken, it is still evident that all our equipments are on an effective war establishment. Retrenchment, therefore, is strictly speaking œconomy, as it places more abundant means in our possession for any extraordinary exertion of power, and any additions could be on an emergency easily and promptly met; as we possess not only the requisite science and command the labour of the workmen, but have plenty of seasoned materials.

It therefore only remains to adopt the necessary measures by the vigilance of the Commandant of Artillery, who could on a general estimate of the work easily effect what is wished, by confining the number of permanent artificers and people to the lowest scale, which, when once effected, should be looked upon as the germ for the formation or extension of the department to any size that the incidental or emergent demands of the service called for; and that when the press of business had ceased, the number of workmen thus temporarily employed should be reduced to its former quota, to proceed with the current business of the department.

Gunpowder.

Bengal and Bombay conduct the business of this department upon the same footing, as the agents at the head of them make their own supplies, with a permanent establishment: but at Madras I believe the supplies are made by the Commissariat, besides a large permanent establishment retained by the agent. I should suppose the agent being left unfettered as to both the choice and mode of obtaining his supplies, may produce dispatch in the transaction of business (as the concentration of power and means to accomplish an object, in any degree of perfection, and particularly in the case of one of such vital importance to the success of an army as this is), be not only a serious consideration, but must materially promote its success, which sinks expense into only a secondary question. For more than practical means are necessary; indeed much science and knowledge are indispensable. The evil of inattention or deficiency of information in this line is easily appreciated, and in that estimation of the subject it will produce the conviction that the service benefits by a liberal view of it as the most œconomical one.

The concluding remarks, on the head of regulating the expenses relative to the gun-carriage department, apply equally here to the fullest extent, so that repetition is unnecessary.

It is still more difficult, however, to establish a strict supervision over this department, as I can, after much labour, discover no mode of checking or preventing the conversion of materials to purposes they were not intended for, except to judge and decide by the quantity and quality of the powder produced. It is a department in which we must always be very dependent on the vigilance, talent, and active integrity of the public officer at its head. Nothing more can be added, except that I was much interested by the able observations on the mode of manufacturing powder, contained in Lieutenant Colonel Galloway's Report of the Bengal Powder Establishment. I should subjoin them, but the paper is of too great a length and too controversial a nature. I shall therefore content myself with a short extract, relating solely to the financial part, as connected with the spirit of this Report.

" But in discussing the question of expediency or of œconomy in having manufactured at any given place, besides the *mere expense of labour*, there are other points which are usually thought not unworthy of notice, such as the *quality* for instance of the *manufactured article*, the price of the *raw materials*, the *care or difficulty* of *bringing it to market*, or, which is the same thing, to where it is to be used, the risk, expense, *chance* of *damage*. And if the article be very important, such as *food* for *man*, *forage* for cattle, or *ammunition for an army*, the production of it *on the spot* where it is wanted has generally been thought by no means a matter of indifference: six annas and six pice per barrel of gunpowder would scarcely be found a prudent balance against these contingencies.

" The expense of manufacturing gunpowder at Madras, labourers, &c. is permanent throughout the year, and consists of 14 Europeans, 301 men, 64 women, and 74 bullocks: expense *per diem* 165 rupees, is *per annum* 60,225 rupees, which on 10,400 barrels manufactured in the year, amounts to within a fraction of six rupees per barrel; that is, 6 rupees for 60lbs. of powder, equal to 10 rupees per barrel with us, our barrels being 100 pounds.

" Now a daily expense of 165 rupees for 200 days, amounts to 33,000 rupees, which on 10,400 barrels approximates to the sum they state, 3 rupees; it is 3 rupees 5 annas per barrel. The committee of the Madras Military Board state the cost at rupees 3 9 6 as before noticed of the Madras powder, making 44 barrels per day; and thus have taken *only the expense of the* 200 *days the workmen were actually employed*, *leaving the expense of the establishment for* 165 *days*, *or nearly* half the year, out of sight entirely. This, however, forms an item of 27,225 rupees; and although the people, when the manufacture ceases, are employed under the superintending engineer, and their pay debited to that department.

" Charcoal being provided ready made by contract at Madras, consequently the head labour is not debited with it. At Ishapore a large establishment is kept for preparing charcoal, which of course falls under the head of labour alone assured. The mills at Ishapore in 1821 worked only 200 days: and only 200 days in the year can work be done, that is in fair weather, in Bengal: for that, the mills at Madras may be worked 240 days. But in 1821, so far as the weather was concerned, the mills of Ishapore might have been worked 260 days instead of 200 or 240 days, and in that case the produce, instead of 5,908 barrels, would have been 7,000, equal to 13,000 Madras barrels.

" At Ishapore, in the annual accounts of the agency, *every item of expense charged upon the powder*, including, besides the ingredients of saltpetre and sulphur furnished by Government, the agent's salary, the cattle and Commissariat establishment, both keep and purchase, the expense of repairing and receiving machinery, and of keeping the buildings in repair, a further charge was last season introduced, and put on the powder of 6 per cent. in name of interest on the capital laid out on the buildings, lands, machinery, and 10 per cent. on the value of the cattle.

" Taking therefore this mode of calculation, the price of the powder manufactured at Madras and at Ishapore last year will be as follows:—Madras powder, the rate 2 fanams per lb., the amount of the capital laid out on the works there, I will take it as given by the Madras committee, including 6 per cent. interest on capital, the price per 100lb. of powder is ..... rupees 22 9 0

" At Ishapore, per Captain Galloway's annual accounts, including interest on capital at 6 per cent., the price was..... 17 15 7

" Less at Ishapore per barrel ..... rupees 4 9 5

" So that it leaves out that the *real cost* of the powder made at Madras nearly five rupees per barrel more than that which is made at Ishapore.

" I have seen that the quantity of powder made at Madras, 10,400 barrels, amounts to 624,000lbs., which at 2 fanams per lb. make ..... rupees 104,000 0 0

" And that the annual expense of establishment alone by Capt. Balmain's statement is..... 60,225 0 0

" Leaving for the ingredients of the powder ..... rupees 43,775 0 0

" Viz. for saltpetre, sulphur and charcoal, stores of timber, iron, copper, brass, firewood, tear and wear, repairs of machinery and building, only 7 rupees per barrel, for 6,240 × 7 make ..... rupees 43,680 0 0

" Now with us at Ishapore, the saltpetre alone in its crude state contained in a barrel of powder cost last year per export warehouse invoice upwards of 7 rupees. The firewood used in preparing the ingredients amounted to rupees 5,986. What the saltpetre cost at Madras I know not, but I believe it is fully as dear; and fuel is more expensive at Madras than at Ishapore: the sulphur I presume is nearly the same price at both Presidencies. But the third ingredient, the charcoal, I find by Captain Balmain's statement, notwithstanding its inferior quality, cost within a fraction of double the price of ours. Our composition charcoal was only 2r. 8a. 7p. per 100lbs., including price of the wood, fuel to burn it in Coleman's cylinder, in peeling the bark off and in preparing it in every way, 2r. 8a. per 100lbs. is per candy of 500lbs. rupees 12 10 11

" At Madras, per candy, the cost is stated by Captain Balmain to be..... 22 12 0

" Difference in price of charcoal less at Ishapore..... 10 1 1

" So also even in numbers our establishment at Ishapore is less than at Madras.

	Europ.	Nat.	Cattle.
" Captain Balmain states the establishment to be, exclusive of charcoal establishment	14	365	74
" At Ishapore, whilst working and including charcoal establishment, we have	2	324	120
" When working at Ishapore	less 12	less 41	more 46
" At Ishapore when not manufacturing.....	2	101	120
" Not working at Ishapore	less 12	less 264	more 46

" It appears, therefore, that when working, we have in cattle 46 *more*, but in men 41 natives and 12 Europeans *less*, than are employed at Madras; and when not working we have men, natives 264, and Europeans 12 less than at Madras. And I doubt much whether those 12 Europeans in excess to our number, besides their pay, which is only here reckoned, do not cost the Honourable Company within a trifling sum of the whole expense of all our native establishment put together."

Pay and Allowances.

By this article I do not intend to intimate anything more than an intention of discussing some of the several items generally that form it. But to take the subject upon a broad principle of equality, I should conclude, as a fair measure, that one scale of pay and allowances for the three armies should regulate without reserve that serious point of military finance; for otherwise all distinctions of a peculiar nature, among bodies of men who are in daily communication with each other, create discontent, and are looked upon as marks not only of indulgence on the part of the Government, whose servants they all equally are, but of partiality that scarcely any individual merit can claim. It cannot be, however, the object, as I stated above, to discuss the component part of pay allowance, but only to notice the differences that exist among the regimental allowance, connected more intimately with those that pass under the denomination of contingencies, or extras, and to propose the adoption of a simpler method for the allowances of the army produced by consolidation, but in no way affecting their amount, the object being the simplification of accounts to both parties. Before, however, entering upon this miscellaneous question, I shall state the plans of others that are in practice, and consider it may prove curious to examine how the mode of consolidation in Bengal proves by its operation either a gain or loss to the individual or the public;—for that purpose I subjoin the argument in a tabular form, which exhibits the annual amounts of the pay and allowances of the several ranks of commissioned officers.

This plan is unlike those in practice at Madras and Bombay, whose calculations are by th *per diem* mode: the inference is by the table, that the public sustain a loss by the Bengal plan on the occurrence *of all casualties*, which must take place annually, during the intervening period of four years, or of one leap-year to another, owing to the pay and allowances of the intercalary day (29th of February) being distributed in the calculation for the three preceding years: consequently an officer in Bengal actually receives more pay and allowances *per annum* for three successive years than one at the other two Presidencies, where however it is made up to them in the bissextile, who by the *per diem* system draw an additional day's pay and batta in the fourth year (29th of February). To instance which, let us take any one rank, that of Colonel, who by the consolidated plan receives 8r. 12a. *per annum* more than the others, which in four years amounts to 33 rupees, being just the sum of an *extra day's pay and batta* drawn in the fourth year at Madras and Bombay, equalling the aggregate of those four years; so that by the Bengal consolidation plan every officer in that army that dies or resigns before the expiration of the fourth year, really receives the small overplus or difference stated, which could only be recovered if he remained in India to the end of the leap-year. And singular further to observe, that upon whatever principle the calculation may have been framed, a kind of off-set is either accidentally or intentionally made in favour of the Government, who on the score of another species of casualty (the absence of officers in Europe upon private affairs, or sick leave, which must be viewed in this light, being in effect a temporary casualty) gain by their absence while in England, even though they may receive their net pay there, still the gain arises from their batta.

	By Consolidation plan *per annum*.	By the *per diem* plan *per annum*.	Loss until Leap-year.
Colonel	15,543 12	15,535 0 8	12
Lieut.-Colonel	9,934 8	9,930 0 4	8
Major	7,690 14	7,687 8 3	6
Captain	4,488 12	4,487 0 1	12
Lieutenant	2,709 0	2,708 0 1	0
Ensign	2,185 0	2,175 8 9	15

The disproportionate difference to the ensign is very striking: how it is brought about I cannot conceive; there is however no mistake in the way which I have derived it by calculation.

All subsistence should be a fixed *per diem* allowance, as this item must, from its peculiar influence and effect on an officer's ultimate pension, be deemed the ground not only of his pay in India, but operate in the end as the reward of his long period of service when worn out and fit only for retirement.

The other parts of an officer's income called allowances should be a consolidated monthly sum; for the clearer understanding of which I have subjoined a table of the present and the proposed consolidation plan. The one in Bengal is only partly so, and does not comprehend my view of the question, and is not I hope open to the same objection; but on the contrary will appear fair, as it consults the interests of individuals as well as those of the State: the bearings of both I trust will be obvious.

The batta, house-rent, tentage (except horse allowance) should form one amount, corresponding with the rank it belongs to, not only because it is a convenience to the officer, but would tend much to the simplification of the public accounts, which would be freed of a load of small items that arose from temporary causes, now past, for the insertion of which much time, labour, and expense are incurred; but all broken periods should be calculated on the average of the current month. In fixing the sum, regard should be had to maintaining a difference, as they exist at present, between the field and garrison allowance, which appears to have been the object of the principle laid down by the Court of Directors. The rule for field allowances could be applied or extended to troops on actual service, marching about, and defending certain frontier posts, on stations difficult of access, or occupying certain positions of political importance. This would be establishing a distinction in favour of those most liable to expense, on account of marching equipments.

This further examination of this question shows there is no part of it has given rise to more inconvenience than the increases and decreases, however well intended to meet temporary inabilities, that have been at different periods ordered; and the tent allowance has I think been subject to more fluctuation than any other item. It would be here both tedious and useless to repeat its changes; the principle embracing it I presume is the only part connected with the discussion, and this I should imagine rests on the basis as stated by the Court of Directors, "in lieu of all camp equipage and quarters," though they made a further addition in 1823 of house-rent to those on garrison allowances: since that period, however, the half tentage was directed in 1829 to become general for European troops on garrison allowances. I have shown that the effects of this order bear most unequally.—It might probably belong to this head to annex a short statement to show how the pay and allowances of an officer of any rank (for any one rank will suffice to explain the argument) have been augmented or decreased.

	Total Garrison pay and allowances.	Total Field pay and allowances.	Difference.
Lieut.-Colonel	828 0 0	1028 0 0	200 0 0
Major	641 0 0	786 0 0	145 0 0
Captain	375 0 0	415 0 0	40 0 0
Lieutenant	226 0 0	256 0 0	30 0 0
Ensign	181 2 40	281 2 40	20 0 0

The original pay and allowances of a lieutenant were as follows:—

Pay, 60. Half batta, 62. Gratuity, 24. House-rent, 25.—Total, 171

Subsequently tent allowance of 50 rupees was substituted for house-rent. The total was	196 0 0
Lastly, house-rent was added of rupees	30 0 0
The present amount of	226 0 0
So that the increase of the batta for the field of 60 rupees	60 0 0
Makes it rupees	286 0 0
But the house-rent is struck off	30 0 0
	256 0 0

So that a lieutenant taking the field, literally only receives an increase of rupees 30, because his garrison pay and allowances have been increased from 171 to 226.

This account however can only apply to the officers of Madras and Bombay, as those in Bengal have always been on field allowances, with whom therefore no fluctuation could take place; for I do not look upon the abrogation of the double full batta as a reduction of the established allowances of the officers, as it was created for a particular service, and paid as a kind of gratuity by the naval Vizier of Oude, in whose territories it alone existed.

Exclusive of pay, batta, gratuity, the several ranks from the year 1799 to 1804 drew when on field service every second year the following sums, under the head of tent purchase, with a monthly sum for carriage:

Field officers	1,600
Captains	800
Subalterns	400

In December 1804 this was abolished, and a higher rate of tent carriage instituted, dividing the above sums into twenty-four parts, to be drawn monthly, as follows. This order was also repeated in July, 1823.

	Garrison.	Field.
Colonel	150	216 3
Lieutenant-Colonel	150	216 3
Major	150	216 3
Captain, or Surgeon	80	133 2
Subaltern, or Assistant Surgeon	52	66 3

In September 1824 it was again altered, and stood thus:—

	House.	Garrison.	Field.
Colonel	0	200	200
Lietenant-Colonel	100	150	150
Major	80	120	120
Captain, or Surgeon	50	75	75
Lieutenant, or Assistant Surgeon	30	50	50
Ensign	25	50	50

The application of the half tentage at the three Presidencies stands forth as a remarkable instance of that deviation from uniformity, so frequently pointed out, not only as a serious defect, but an unaccountable one in the application of a general system of finance. Its operation is partial, for its extension is the widest at the smallest Presidency, that is to say, it comprises in its range the greatest number of troops (at Bombay). The existence of this distinction between European and native troops serving together in the same army and same cantonment, appears at first sight as invidious, and for the interest of the State better obliterated than allowed to remain as a seeming defect in the code; but the higher authorities have always considered it expedient, for strong reasons, to maintain these two branches of the service on a footing apparently distinct, from motives that in their view of the nature of the service required such a system.

The half tentage, however, independent of this reasoning, appears almost questionable on the score of justice; for officers are not furnished with quarters anywhere, except at Fort William, Fort St. George, and Bombay. In cantonments they have bungalows, either rented or pur-

chased, and must be provided with camp equipage, whether stationary or moving, not only for emergencies but ordinary occasions of reliefs. I should imagine that it is but a proper sense of duty on every occasion where rules operate partially, or in any way bear hard on individuals in the service at large, to bring the subject to the knowledge of Government, especially when the operation of any such rule or order is expected to produce a good effect, by obliterating distinctions between corps of the same army. I am therefore induced to think that placing the partial effect of this order in a clear light, both as to feeling and limited saving on the score of œconomy, that it may tend to a beneficial result of admitting full tentage at all stations; for the abstraction of that allowance certainly gives room for the conclusion, that officers are relieved from the idea of their having the camp equipage in constant readiness, as the full tentage was originally granted in lieu of all camp equipage and quarters.

I must add as a conclusion, I have avoided entering into any statement of the expense of the pay department as connected with this subject, which when arranged must and ought always to bear a reference to the number of stations for which paymasters are necessary: and were we to go into an examination of that question, we should soon be convinced that the principle now in practice, whether just or otherwise, seems not to have been the governing one, of proportion, either on the score of the number of individuals employed, the number of regiments to be paid, the salaries to paymasters and clerks, or the quantity or responsibility apportioned with an equal hand.

Mess.

The mess allowance only requires one remark: that in Bengal it is rupees 120 always, and at Bombay 90; but it is at Madras 126 in the field, and 63 in garrison. This notice of it, I presume, is quite sufficient.

Boat Allowance.

This allowance I shall advert to again in another place, and must at present confine myself to that part of it that relates to the officers alone.

In Bengal, officers proceeding to their regiments, or staff officers proceeding on duty, draw a monthly allowance according to their rank, which at the recommendation of the civil Finance Committee, by the late Bengal orders, has been reduced; for instance, the lieutenant-colonel from 630 to rupees per month. I do not here allude to the circumstances of transports or expedition, which are conducted pretty nearly in the same manner at the three Presidencies. The first part of this subject (the officers' boat allowance) is the most prominent in its operation in Bengal, and appears also the most tardy and expensive plan. As an instance applicable to this general rule:—for the journey from Calcutta to Agra, a lieutenant-colonel was paid rupees 3,780 in addition to his pay and field allowances for six months; and was during that period of half a year not available for duty. But the distance through a cultivated country, and a fine military road by land to that station, is 958 miles, which by the regulations at 12 miles *per diem*, with the halts for every three days' march, allows him to accomplish his journey in three months and a half, while it brings him to his duty and station two months and a half sooner than by boat. If however it is argued in mitigation, that the boat allowance is to enable an officer in Bengal to buy his marching outfit, and to defray a number of incidental charges at the commencement of so long a journey, it would still be more œconomical for Government to give an extra marching allowance to meet this object. But there is no indulgence of this kind known at the other Presidencies: a passage is found for an officer in a boat: or the Commissariat charge for a passage, and the batta of the rank, are made to meet and suffice for the expenses incurred in all movements.

Having made these observations, it can only be left to the judgement of the higher authorities to consider these local inequalities and advantages as forcing themselves upon our view; but to persons, the sphere of whose minds is not confined within the limits of a single Presidency, but who look abroad, and contemplate in a wide range the affairs connected with the existence and general welfare of the whole of India, these objections will appear of a minor class, and will not be allowed to interfere with the introduction of a conformity to a general and well digested system, which ultimately will tend as much to the contentment of individuals as it would promote the interests of the State.

Regimental Contracts.

On the subject of the regimental contract allowances, I had proposed to myself at one time not only to enumerate almost all of them, but so to class them as to exhibit all their differences; but those differences are so minute and various that hardly any advantage would be derivable from the detail, and could only prove of use when a general assimilation and uniformity was to be established. To show, however, that I do not proceed entirely on general maxims without sufficient regard to details, for illustration I shall note some of the most striking topics, omitting those of minor interest.

The allowances for a company, the stationery, and repairs of arms, &c., are all so blended together, that they must be examined in that collected state; their amounts vary, and furnish us with the following result:—As a specimen, suppose that the Madras and Bombay armies were each of equal strength with that of Bengal (His Majesty's troops not being included in the calculation), there would be an excess drawn in Bengal of rupees 171,840 over Madras, and rupees 146,064 over Bombay, agreeably to the regulated allowance for a company. But if the numerical strength equalled the Madras number, Bengal would then draw an excess of rupees 122,880 over Madras, and rupees 104,448 over Bombay: and if the number was taken at the strength of the Bombay army, Bengal would still draw an excess beyond that army, of rupees 57,264, and of rupees 66,840 over Madras. Or, in other words, the Bengal army consisting of about 716 troops and companies, draws rupees 139,944 more than the Madras and Bombay armies together, consisting of about 778 troops and companies. I note this merely as an observation connected with the general financial question at large, to exhibit differences, but with no view to cause a diminution in Bengal: my object only is to place the whole existing system, with all its defects and anomalies, in their true and fair light, that those who have the authority to determine should not be deficient on the score of the requisite information, for the decision of so momentous a question as the personal income of the several individuals composing an army of two hundred thousand men.

In His Majesty's regiments of dragoons and infantry there is also a different system obtaining at each Presidency, with regard to the King's contingent and non-effective allowance.

This ought to be entirely discontinued, as inapplicable to this country; and the same allowance should be granted to officers commanding troops and companies in His Majesty's service, for stationery and command, as is granted to those of the Company.

In Bengal alone there is a contract allowance for the repairs of gun-carriages, and wheels, and petty stores to the artillery.

At Madras there are artificers for these purposes, both in the ordnance stores and in the regiments.

In Bombay there are artificers, and an allowance per troop for the horse artillery, for grease, tar, iron, &c.

I am much averse, on general principles, to all regimental contracts for the supply or repair of arms and stores in particular, for reasons hardly necessary to mention; and whatever objection may be made to this opinion, facts furnished by experience prove the justice of this reasoning. Few can have a higher opinion of the military character than I have; and the more I indulge in an estimate of their qualities as gentlemen, the more I am satisfied they make bad contractors: but if their incomes are to be added to by the means of contracts *, I should feel happy to see a fair and legitimate one opened to the commanding officers of regiments, that would afford remuneration to them, be an object for the younger officers to look up to, and prove a good and effectual source of supply to the Government.

Instructed artificers in regimental establishments attached to corps is probably the best, though most expensive mode; but a modified plan is equally attainable of one superior master of each class on good pay, and others to be hired when requisite at Bazar rates, which would have also the effect of encouraging artificers to remain in our Bazars, and the periodical delivery of all petty articles of supply from the magazines on indent.

The establishments or allowances for writers and stationery, office allowance, moonchee allowance, candles, sirkar, writers, office, tentage, carriage for regimental books in the field, family certificates, repairs of tents in the field and in garrison, are all instances of dissimilarity, and so unequally applied to the departments that a new uniform scale seems the only remedy.

The differences relative to the saddle contract, their repairs, &c., being of higher importance, I have reserved for the discussion of the cavalry branch, as appertaining peculiarly to that arm of the service, and therefore could not with propriety be introduced in this miscellaneous enumeration.

Nor has it appeared necessary to me to quote the opinions either of the Honourable Court or of the Governors and Commanders-in-chief in India, by way of support to my own mode of thinking, which will, if I introduce them at any time, appear I trust in a more appropriate place to maintain arguments and sentiments, touching matters of deeper interest both to the State and private individuals, than when discussing minor points of this nature. I shall therefore offer no excuse for so short and concise a notice of a subject that every military man knows could be easily dilated into great detail.

Mode of Keeping Accounts.

It appears that the mode of keeping accounts under the three establishments varies, and that nothing but a close inspection of the several heads of expenditure could induce me to pronounce

* Mil. Fin. Com.; and Sir T. Monro, &c.

that the existing systems require modification, from the difficulty in some cases that attended any attempt to ascertain the real charges appertaining to any particular department.

The plan of charging part of the military expenditure to the civil department by thirds and fourths is peculiar to Bengal, and seems an objectionable way of keeping accounts, as it renders the tracing of the real outlay of money very intricate. This is proved from the manner in which the department of public work is conducted in Bengal, and the mode at Madras in which the salaries of some of the heads and subordinates of the great department are proportioned: at this last place the pay and allowance of the Adjutant-generals, &c. are charged to the regiment he may belong to, and his salary to the staff line. In Bengal, he draws a consolidated staff salary, and his subsistence only with his regiment. The complication occasioned in the military and civil books, under the heads of credits and debits, by these and other charges, which ought to be debited in a very simple way to each line, by preferring separate bills, and for supplies made for work done to each branch, civil or military, as the case might be. The latter part of the preceding remark alludes principally to the almost unintelligible and certainly inconvenient mode of mixing the charges for the transport of troops, stores, ferries, passage-money from port to port, shipping and freight by the marine, all together. All this will be duly noticed subsequently in its proper place, with such explanations as, I trust, will prove that the working of systems elsewhere possess a greater degree of utility, which is the consequence of the clearness and regularity of the practical rules, being more applicable to those lines of business.

In discussing the subject of keeping accounts, the Pay department naturally presents itself for consideration, as forming a main part of the subject; the remarks, however, relative to it will not be numerous, but closely confined to the mode of procedure, and cannot comprehend any observations on the score of the expense of establishments, as this latter question is noticed in its proper place. To allude generally to this part of the subject, I must state that the Supreme Government have, I believe, become sensible, on comparison, that the number of Paymasters at Madras exceeded, and also that the aggregate annual amount of establishments equals, Bengal, and is three times that of Bombay, notwithstanding the territories of that establishment are more compact than those of either of the other Presidencies.

At Madras there is a separate Paymaster for king's troops; in Bengal and Bombay this duty is done by the same person, and at the latter Presidency he is Paymaster of all departments and extraordinaries, besides the Presidency division of the army. It appears that the Paymaster of Fort William has a greater range of payment to make than at the other Presidencies; but then his duties upon the whole do not exceed those at Bombay, because the abstracts are sent to the Audit Office in the first instance for examination, and payment is made only when audited; so that there is neither responsibility nor trouble attached, and consequently his office duties consist of transcribing the disbursements authorized by the Auditor-general. This practice, I apprehend, may tend to make the local Paymaster less careful; while he at Bombay examines all regular abstracts or charges of a fixed nature, and endorses and transmits all the Commissariat and Engineer bills which pass through his hands to the military Auditor-generals: he is also responsible for all errors in calculation and deviation from the regulations in the pay of the troops, who by these means, having responsible persons in the Pay Office, receive their pay every month at an earlier period at Bombay. But in Bengal, in consequence of having the accounts first audited and afterwards paid, they are always one month and a half in arrears:—hence arises the fact, that the Bengal and Madras Paymasters receive more pay and appear to do less duty than the Bombay ones; the first have less responsibility, and the other a smaller amount of payment.

The Bombay system seems to me the most comprehensive and œconomical, as also equally efficient; and there can be no objection to the introduction both of its principle and mode all over India. It is after all a mere arrangement of the routine of office duty, and its adoption would produce the best effects, particularly on the score of uniformity.

If the officers of the subordinates in Bengal were on the principle of the Presidency one, as to a sufficiently wide range of business, with the adoption of the regimental Paymaster in the person of the Quartermaster, with the single abstract for the whole regiment; instead of eight as at present, the business would be conducted with greater facility and efficiency, and considerable saving to Government; indeed with this simple mode, and a little local arrangement, it would not be difficult to place this important department upon the best foundation. The remark relative to the arrangement for having central positions for the ordnance depôts is equally applicable to this office when the stations of this department are arranged.

As a matter connected with the general question of keeping accounts, it is I conceive not irrelevant to introduce any opinions or modes of calculation intended to exhibit financial results. I shall therefore append the following remarks, as throwing more light upon a topic of this nature by comparison than could be done by a long dissertation, and is only proposed as an example of different ways of estimating the public expenditure. The minute itself is by a Madras officer of rank, intended to describe both the system prevalent at that Presidency, and the improve-

ments that had been effected within the last seventeen years; placing the œconomical part of it in a very prominent point of view. My remarks will attend as they may be called for. "It appears that until the formation of the Commissariat in 1810, the whole of the barrack department, including the charge of military buildings, and the supply of barrack articles for the use of the troops, was in the hands of officers holding the appointments of barrack-masters, one of whom was attached to each division. These appointments were then *abolished*, with the exception of two, one at the Presidency and another at Bangalore, who also continued to have charge of the military buildings, though this charge at all other stations was vested in the department of the Quartermaster-general; while the minor supplies of oil, barrack articles, cots, &c., devolved on the Commissariat. The former barrack-masters' salaries being small, they were remunerated in some situations by liberal fixed rates for supplies, and they also held a contract for the maintenance of barrack cots, which ceased at the same period. The Commissary-general, under date the 6th February 1811, received from Government a discretionary power; while new regulations were being prepared to make such deviations from the existing regulations, in regard to the rates and number of barrack servants, 'as in his judgement might be most conducive to the public interests.'

"The general result of these arrangements was a great and immediate saving to Government. The cost of the article of oil alone, which in November 1810 was rupees 9,105 2 5, was reduced during the next month to rupees 2,696 6 1, giving at once a saving of rupees 6,408 12 4, being at the rate of rupees 76,905 4 *per annum*. The rates of every other article of barrack supply were also materially reduced in price during the first month, and afterwards were still further decreased as the new system became regularly established.

"The expense of the barrack supplies to His Majesty's troops on this establishment for many months prior to the formation of the Commissariat was equal to pice 6 22 cents a man *per diem*. The expense from 1st December 1810 to 30th April 1811 by the Commissariat amounted only to pice 2 93 a man *per diem*."

I shall now remark on the preceding, that I am at a loss to imagine, and leave the accuracy of the idea to those conversant with matters of this kind, how a *per diem* calculation per man can be formed for *one year*, on data that can only be depended on when furnished by an aggregate or a series of years; for it is only necessary to meet this hypothesis and its sweeping and condensed conclusion by one observation,—that barrack furniture is calculated to last for *years*. How then is the *first* year to be made the average of anything beyond itself? The memorandum then continues:

"The total number of barrack cots belonging to the public on the 1st December 1810 were 20,542, and the charge for keeping them in repair and good condition under the former system would have amounted in twelve months to rupees 57,517 annas 9 and pice $7\frac{20}{100}$; while the actual expense incurred during the same period in the Commissariat was only rupees 3,761 annas 15 pice $1\frac{72}{100}$; thus was effected during the year, in the item of barrack cots alone, a saving of rupees 53,755 annas 10 and pice $5\frac{48}{100}$."

Here then we have the solution of the preceding accounts; for the very commencement of this paragraph speaks volumes as to the grounds of the above alluded-to calculation. For admitting that the whole of the European troops on the Madras establishment were on the full war complement, in point of numbers they could not have exceeded 10,000; it will therefore be seen by the first part of this paragraph, that there were at least *two cots* per man in store, without adverting to the European regiments at field stations and in the field, where barrack furniture is *not* allowed. How then can a *per diem* allowance of expenditure per man (when more than double the quantity is on hand) be entered into on sound data for a comparative statement on œconomical principles? for it is not only a contradiction in terms, but in ideas, and even of the regulations. Supposing, for argument's sake, that the Government at all times kept up *one* cot for each man; but on the Madras returns there are no less than 20,542 in December 1810, that is to say, two cots per man with 542 surplies, and for their *maintenance* it cost upwards of rupees 57,517, which sum in the current year was reduced to rupees 3,761, and for which credit is assumed as a saving, which is quite correct for that year.

The fact, I presume, however, is, that this *maintenance* means original price on a series of years, as well as annual repairs; for it is almost absurd to think that every cot should cost upwards of rupees 2 12 repairing one year, and never afterwards cost barely three annas, or about a fifteenth part: and the foundation of this great saving may, I think, also be fairly referred to the abolition of the regulation contract allowance for the maintenance of each cot, touched on in the first paragraph, which was discontinued, and subsequently the requisite repairs by the Commissariat were only allowed. This liberal allowance previously mentioned to be intended to compensate for smallness of salary, made it the interest upon the above avowed privilege of the person in charge of the furniture to increase and accumulate the number as much as possible, leaving the Military Board to judge of the question from the monthly returns.

The question of oil is a very different one; that article is daily received and daily consumed. The expenditure therefore can be proportioned to each man according to the quantity of oil issued, and the number of men for whom it is received.—The memorandum then proceeds:

"It seems unnecessary to enter into further particulars. Suffice it to say, that the saving in this branch during the first year was rupees 2,26,402 15 3. The system as then established by the Commissariat is still in force, but various savings have been gradually effected since the first year; and in contrasting the present system with that maintained previous to the month of December 1810, those savings up to the 30th April 1827 have amountedto rupees 4,166 6 76.

"The actual amount of saving since the 30th of April 1827 has not been exactly ascertained: it has probably fallen rather short of the two preceding years, on account of the number of new cots of a new muster, which have been made up in obedience to the orders of Government. These cots are scarcely more expensive than the one formerly in use; while they afford much additional comfort to the troops, by answering as messing furniture. The average saving for the last two years may perhaps therefore be assumed at two lacs and a half *per annum*, which will increase the entire amount of saving in the barrack department up to the 30th of April 1829, to 46½ lacs of rupees."

The summary of the argument is made by a statement, that from December 1810 to April 1827 (nearly seventeen years), the monstrous sum of forty-six lacs and a half has been actually saved, and is, I believe, thus proved to be so. The saving effected the first year (1810-11) by the establishment of new and beneficial regulations is taken and carried on, by which the actual expenditure of one year is in the first place substituted for the lavish outlay of the old contract allowance, which it is said was intended not only to cover all public expenses, but also to pay and remunerate the officer in charge. This mixing of personal salary with the allowances for establishments I have complained of so frequently, that to comment on it here would appear superfluous; but the calculation does not terminate with the saving of the first year, but influence gives it a prospective and certainly an ideal existence, by multiplying it by the sum of the succeeding sixteen years, as if in each of those years the same sum had been actually œconomized to the public purse as was saved in the first year.

I therefore trust that this explanation will sufficiently exhibit both the style of the argument and elucidate the data on which are founded such immense results. It may also occur, probably, to many others to ask a question not inapplicable on viewing such deductions, What the actual sum total of the cost of the whole of the barrack furniture and supplies for one year is at Madras, if it amount to two lacs and a half; for the expense of the oil does not exceed rupees 3,300 *per annum*, and the repairs of the furniture rupees 3,800, giving an actual outlay of rupees 36,800, upon which no saving can be effected: and therefore what proportion of the barrack furniture must be worn out and expended, to admit of a substitution of an annual quantity, on which a per centage of two lacs and a half can be saved by deduction of price or number every succeeding year for seventeen years; because if that sum be annually saved, it must be œconomized from one very far exceeding itself. And again, What must have been the original outlay.

In analysing the calculations or statements of any person, it would be unfair, both on the score of feeling and regular mode of conducting business, not to make every allowance, not only for the obvious meaning their arguments can bear, but also to extend that admission to what may be supposed to be their intention on the grounds of this sentiment, which cannot for me be too tenaciously held in mind, in justice to the variety of the task I have to perform, and the unavoidable different views of others that must be expected to be encountered in the course of examination, not only of the details of offices, but of the opinions of numerous individuals of rank and talent. I must still come, I am inclined to think, with strict propriety to the conclusion relative to the tenour of the foregoing statement, that though founded on original fact, still that the results deduced from them are extended to meet conclusions, that a sense of more moderate zeal and mode of judging would circumscribe within narrower limits. I ought probably to say much more in this expiatory strain, for I am led to imagine I am combating the opinions and arguments of one of the best informed officers on the Madras establishment; but I feel assured that nothing has escaped me that could give rise to the imputation, that I have done more than fairly examine a statement, the tendency of which points to the good of the public service, with the best feelings towards the individuals who drew it up.

Another and very serious division of this general subject next attracts our attention.

The dispersion of charges at all times into a variety of channels, when belonging to the same department or line, instead of being brought together under one head, defeats one of the first principles of œconomy and regularity; for it is quite impossible to ascertain if charges are correct or can be diminished when divided between the civil collectors, for instance, and Commissariat, except from an intimate knowledge of both those departments. From a regular mode of conducting business, a conviction arises that if the dispersed items were brought together and charged for in one department, under proper regulation and control, they would be much less; as a due check would then be had if the outlay, for example, were on the score of freight for stores and passages for officers and troops. In these latter cases the marine department should be furnished by the Quartermaster-general's department, with an indent for the quantity and species of tonnage required, and the description and number of persons to be accommodated; upon which the marine departments should examine and determine both the kind of vessels most eligible, and the price of the freight by contract or bargain. These

charges should be defrayed by a bill from the marine at the military Pay Office; but as to the usual passages for officers and troops by boats, the Quartermaster-general should furnish the Commissariat with an indent, who should supply them by means of a contractor in that line, and defray the expense, which would be both more œconomical and regular than the present Bengal plan of currents on tide calculation up and down the river.

Under the head of Medical Disbursements in Bengal, there are charges for medicines to camp followers and magazine establishments; while it appears that the garrison surgeons draw similar allowances in several instances for the same at some of the principal forts on that establishment.

The Commissariat accounts show charges for supplies to the hospitals of all troops, both King's and Company's; while the dispensary charges also for medicines to them, and the medical disbursements also exhibit charges. This is at least productive of inconvenience if not confusion; as on occasions of reference the Commissariat, dispensary, and medical disbursements must be travelled through to ascertain any particular expense; and after all, the truth is not found without examining some surgeon's personal abstract for his established allowances.

The examination of the head called Ordnance Losses, which includes the expenditure of stores of all descriptions, with the artillery corps, exhibits in Bengal a large sum, written off the books, which will prove some explanation of the mode of keeping accounts. The loss quoted might be with no great breach of propriety called ten lacs, as seven for the whole is estimated; as there is no distinction drawn between the actual outlay of cash and the estimated value of the stores received from Europe: and when there is any debit, which must of course be annually the case, it is written off to the debit of the military department; consequently the real charges are not known, even to the accountants themselves, as the labour and expense may be considered incalculable, from their minuteness and dispersion amongst so great a variety of heads. We could instance one branch (the Military Board in Bengal) which debits and credits itself for supplies many times in their own account. This of course makes it difficult to ascertain whence the articles originally came, and where they are finally expended.

Further instances might be adduced of this mode of keeping accounts, but detailed references can answer no good end till a general arrangement is determined upon. Nor do I intend to make observations of this nature as attaching solely to one Presidency, but conceive that all the systems might be improved; for Madras is not exempt from the imputation of blending and mixing the items of their accounts together, as they include the hire of carriage, bullocks, the pay of Bamboo Coolies, Tent Lascars, and hutting money, in one aggregate sum; so that perspicuity is set at defiance.

The practice also in Madras of charging for clerks under different heads in one and the same office, when they have a specified sum office establishment for the Commissariat, is observable in the provision, cavalry, and cattle departments, &c., and is no doubt objectionable. Stationery is also drawn from the public stores, and other allowances are permitted under different heads to departments which, when specific sums are required, render the tracing of the several items composing the amount expended for office establishments and stationery almost unattainable.

These are not the only objections to this system in Bengal, which, besides the subdivision of the expenditure, places the check and control, if any exist, over these enormous sums, in the hands of irresponsible persons. If it is said I give a dark shade to the subject, reference could be had to the accounts of the Burmese war, and other sums not subject to the examination of the Auditor-general's office, but are accounted for by the secretaries to the Military Board agreeably to the rules of that Board, and reported accordingly.

Under these circumstances, I should imagine an uniformity of system on general principles absolutely necessary, leaving the details of course to the discretion of the heads of departments; and then I conceive the subject would resolve itself into the following propositions:—

All officers of supply intrusted with the disbursements of money should render their actual accounts monthly, supported with vouchers as specified by regulation; and the charges incurred should not be passed to the credit of any officer until inspected by the regular office of audit. That neither the Government nor Military Board be auditor to pass the accounts of any branch of the service which they order, except in such cases as appeals to Government for sanction for outlay of cash, in emergencies not provided for by the regulations.

2nd. All charges relating to any particular department to appear in its own accounts, and not to be dissipated under numerous heads. By this rule the real expenses will appear in their proper places. All wastages, loss of stores, provisions, liquor and dead stock, should be written off in kind, to show the number and distinct quantities, to enable an exact calculation to be the result, as the averages arising from these heads, and might subsequently be stated in the general books in money. This will exhibit the point in two lights, and enable the home authorities to come to correct conclusions.

3rd. All calculations on money or stores should be actually for the sums and quantities purchased, received, lost, &c., and nothing should be taken in the settlement of accounts on supposition, nor should accounts be made up by estimation, nor passed to the credit of any officer for the money or stores under his charge, without being authenticated as above proposed; while all

accounts of money and stores should never be permitted to fall into arrears under any pretence whatever.

The evil of this laxity is felt so seriously by all Government, that its being mentioned even, is I conceive a sufficient comment of itself.

Office Establishment.

The first view of this heading will probably suggest the idea that in point of charge the sums ought to be in proportion to the size of the Presidency and extent of business of each office and department. This argument, reasonable as it may appear, is not on a comparative view always borne out in the conclusion; for instance, the two Quartermaster-generals' offices at Madras and Bombay should bear the proportion of three to two, and of three to one to that of Bengal, though they both conduct so many more branches of the public service than the one in Bengal; the deduction therefore from the above reasoning proves the reverse fact, for they have equally as much, if not more business, and Bengal has an annual contingent charge besides for clerks, of rupees 1020.

But the duties of the departments in Bengal, generally speaking, are either so jumbled in one Board or assigned to other offices, which at Madras and Bombay are assigned to their appropriate lines, that facts only can be stated, without any prospect of being able to exhibit by comparison any coincidence; and pointing out differences would be easy in either case, if the same denomination of office executed the same kind or quantity of duty. I shall however attempt what may be in my power, making such references as occur to me to be necessary for a clear comprehension of a topic, that cannot but be a serious question, from its involving the outlay of such immense contingent sums;—probably a few details would prove a better illustration of the meaning than general description.

The ratio of wages to clerks at Madras are, generally speaking, lower than at Bengal and Bombay; but at the same time, in many instances, they have a greater number of hands in their offices for the same duties, when compared with the other Presidencies. In Bengal the same scale of pay for clerks obtains in the military as in the civil branch*; but the rate does not exist at Madras and Bombay, nor are the people themselves classed under similar denominations, as registers, indexers, examiners, indorsers, common writers, fair copiers, and assistants to heads of branches; while at Bombay the scale in the military department seems to be regulated upon no fixed principles, the necessity of the care or local circumstances determining the persons to be employed: so that except the audit† and pay department† at head-quarters, as well as the cash-keeper of the Commissariat‡, there is not a head clerk or person in these offices who receives above 150 a month, being less than what assistants to heads of branches receive under the Bengal system §, and the head clerks under that of Madras ‖. However, taking the expenditure on the whole, which is not always the correctest way, the Madras expenditure will appear as the smallest; though a further inquiry makes this fair appearance questionable, from the practice of charging for clerks under different heads in one and the same office. For instance, there is of course an office establishment for the several divisions of the Commissariat department, and their charges are also entered for clerks in the provision, cavalry, and cattle departments, &c. separately, which if made into an aggregate would be large: this is not the case in Bombay, and I believe only partially followed in Bengal.

Having made these remarks regarding the mode of conducting the duty at each Presidency, it is but consistent to assign to each its relative advantages, and to observe what is derived from local usages at Bengal and Madras on the score of low rate of wages, at least such as are down in the public accounts, which I ascribe to them as an advantage that would be desirable everywhere; for the average for twelve stations in Bengal is 384 rupees each; at Madras, ten stations at 350 each; and at Bombay, nine at 394 each: this arises of course from the higher rate of pay, and not from the numerical strength of the individuals employed. I would wish however to state in this place, with the view to make every allowance for the statement, that this comparison should not be admitted as strictly conclusive, as comprehending all the expenses of establishments in all lines of the service; for in Bengal and Madras the executive engineer draws not only a separate salary for civil works, but an additional sum for establishments: in Bombay he draws neither the one nor the other for this latter work, but conducts both duties without anything additional, with the single exception of the one at the Presidency. The great and real disproportion however appears to me to be in the amount of the salaries; for instance,

25	officers in Bengal get 5,728 rupees; monthly average	224	each.
10	ditto in Madras get 6,020	602	ditto.
9	ditto in Bombay get 2,958	262½	ditto.

This difference is striking enough I conceive to call for the details into which I have entered.

* From 500 to 15 *per mensem.* † 400 to 300 annas. ‡ 300 rupees. § 200 rupees. ‖ 170 rupees.

The nature, extent, and science connected with these officers' duties are of course independent of the argument, and belong to the class and profession, and not to the individuals, and therefore cannot be urged more in favour of one place and person than another.

The subject also of stationery and printing forms for offices is a curious item in Bengal and Madras, and amounts to considerable sums, notwithstanding that it is a generally received opinion that the officers have an allowance adequate to that purpose, and sometimes an allowance for candles, lights, &c. as at Madras. Whatever is allowed should be fixed, otherwise this contingency will have no limit. If forms are printed for the convenience of offices, it is with the intent of accelerating business, and diminishing the number of clerks, &c.

The following will show both the effect and extent of contingencies, and their liability to become permanent when once incurred, attaching to most of the offices at Calcutta:—

Military Auditor	6,528
Military Accountant	6,300
Adjutant-general	5,076
Quartermaster-general	1,020

A very casual examination of the annual statements of the military Auditor-general will show how the amounts of the salaries and establishments vary at all the Presidencies in every grade. I believe no other reason can be assigned for this than what is urged in many other cases,—local circumstances: for the personal rank, duties, and responsibility are not so widely separated as to warrant so great a difference. This examination might lead to the consideration of a fair principle for a new and more beneficial arrangement, which besides its fairness as to proportional remuneration would be conducive of œconomy as well as regularity, which can only be brought into practice on the grounds of a plan more generally applicable, which by its arrangements would separate and assign the several duties to the department to which they properly belong. It is true this necessarily involves much of detail; but it demands no great degree of either talent or knowledge to effect, and its execution can be only determined upon when a final adjustment of a general plan of the kind, which now appears inevitable, is resolved upon, and the distribution of the responsibility and executive part of some of the branches belonging to the Quartermaster-General's department arranged (which appertain to that department at Madras and Bombay), but are conducted by the Commissariat and the Military Board and other departments in Bengal.

I trust that these matters of fact will suffice and render any further detail unnecessary; as it neither can be wished, nor intended, I should more than point out what seems to need modification for the introduction of improvement. Systems and not individuals can alone be noticed in such a Report as this, in which the contrasts are to elicit good, and the establishments exhibited in their real shape to attain a proper knowledge of this important topic.

I entreat it to be held in recollection, while perusing these discussions, that they involve only the current and indeed mechanical part of the duties of all officers. This will be only a common act of justice to myself, who am engaged in so serious and deeply responsible a duty; and that throughout the reasonings introduced, and arguments used here, or in any other part of this Report, the comparative statements are intended to be quite free of any allusion to personal talent or responsibility; and that the object of this contrast is, as it ought to be, solely to show the relative bearing of the departments of each Presidency to each other, and fairly to place their work and means of accomplishing it in one view, as to the power they possess of producing the requisite dispatch of business. I hope therefore it is obvious how much this object may be facilitated, and the labour of detail to the officers themselves diminished in the case of those who possess the amplest means.

The Auditor-general's offices being the largest on the three Presidencies will afford probably the best illustration of my meaning.

Bengal.	Per Month.	Madras.	Per Month.	Bombay.	Per Month.
1 Registrar	500	1 Accountant	400	1 Accountant	400
6 Auditors	1800	1 Clerk	175	1 Ditto	300
1 Assistant	200	1 Ditto	100	1 Clerk	280
1 Indexer	225	Highest native writer	140	1 Ditto	180
1 Examiner	200			Highest native writer	80
1 Assistant	150				
Highest native writer	——				

Bengal, 65 Ordinary Clerks.—Madras, 96.—Bombay, 13.

The duty of the Bengal office comprehends some contingencies; and the pay and allowances of the army of that Presidency, which latter being fixed monthly sums, and not *per diem* allowances, as they are at the other Presidencies, require comparatively little calculation for the employment of so many able persons, at such high salaries, as auditors and examiners, besides a deputy and two assistants. For it must here be observed, as a well-known fact, that the accounts

of the other two Presidencies are always sent round fairly made out, and may therefore only require the mechanical act of transcribing for the home authorities. I should imagine no question would be entertained as to the preference being given to the Bengal mode of making the *per diem* allowances monthly ones: but of this I shall subsequently speak, and at present beg to repeat that I am perfectly aware that much serious business is referred to the Auditor-general for his opinion; but this, as I stated before, has nothing to do with the current duties performed in his office. The correspondence with the higher authorities calls into play the talent and personal information of the head of the office; but the other parts, such as examinations, &c. of accounts, must be conducted by the clerks and examiners. This topic explains to us, that as the Military Board conducts so large a share of the expenditure of the army, this office must be greatly relieved from many arduous branches of its business which devolve upon the audit office at the other Presidencies; for instance, that of auditing the accounts of the departments of the largest expenditure, viz. the Commissariat, Ordnance, Manufactories of Gun-carriages and Gunpowder, the whole of the Building Department, called the Department of Public Works, and Barrack Department. In short, I might say that every department in the army is under the control of the Military Board, who frequently both order the expenditure and audit the accounts.

At Madras and Bengal most, if not all the military offices are supplied with stationery from the public stores, with a peculiarity at Madras of the heads of departments receiving also certain allowance for lights, candles, &c.; while at Bombay a fixed sum* to meet all charges is granted to the military offices, which is not allowed to be exceeded except in the pay department. By this detailed review I think it may be seen which plan is preferable, as it relieves Government from accidents and occasional losses; as paper is particularly liable to damage when retained any time in store, while there appears but little check on the quantities drawn that would satisfy Government that there is no waste.

In noticing the office establishment at Madras, the quantity of its business must be compared with that at Bombay, to which it bears the nearest affinity, and has indeed the same heads for examination, with the exception, as has been previously noticed, of the Commissariat accounts.

The number of troops, European and Native, is about double that at Bombay, and equal to about two thirds of that in Bengal. This, though a fair general argument, cannot altogether be admitted as the most accurate mode of reasoning, for increased numbers of the same class do not necessarily create a proportionate increase of business to an office of this kind; as allowances, established by regulation, do not require the same care or acuteness in the examination, as contingencies, which demand discrimination and judgement to decide on their validity. This latter species of business however, strictly speaking, belongs to the head of the department, and stands forth as a proof of the propriety, indeed necessity, of the broad line of separation I drew between the mere duties of the establishments and the severer one of responsibility required of the officer at the head of an office; nor should I have introduced it here, had it not suggested itself from a view of the unequal number of clerks in the three offices, that appears to bear hardly any proportion to the apparent executive business of each.

I do not perceive anything more that I could add on this head as to its details, except that I have not mentioned Bombay by itself, and only by inference. I have imagined this to be the clearest mode of exhibiting the general comparative state of the three offices as a fair groundwork for the argument, to afford that comprehensive view of it that analogy alone is likely to produce. The one at Bombay is deemed the smallest, though in fact the review of its duties as to variety will not bear us out in such a conclusion; though the annual expense of its office is less than the fourth part of that at Bengal, and much less than half that at Madras.

Medical Service.

The rule lately introduced by the Honourable Court throughout all the armies, of giving superior batta to the surgeons in charge of a regimental hospital instead of a fixed allowance as heretofore, will be a saving to Government in every point of view while stationary; but in the field every regiment that has a full surgeon it will prove otherwise, for he receives by the new mode 300 rupees, exclusive of the Commissariat charges for a native regiment, which the old plan accomplished for 220 rupees, including every charge. The case, however, of the assistant surgeon in both situations is materially deficient and greatly reduced; and though it may be a set-off or counterbalance to the higher grade, and provide him with greater allowances in the field, yet no pecuniary advantage can be meant on this head to be in proportion to any idea on the score of professional skill; and though it would be in accordance with all received maxims of established order, that the superior rank should claim superior advantages on the head of salary, still, where a subordinate is unavoidably doing the duty of a higher grade, possessing the same professional knowledge, he might be allowed the same emoluments temporarily. In garrison the surgeon gets 165 rupees, and an assistant performing the same duties receives 60; in the field, 300 the former, and 90 the latter. The constitution of the medical branch of the service under

* 20 rupees *per mensem.*

the three Presidencies is of course similar, although the emoluments vary very considerably. As the same staff duties, for instance, a superintending surgeon at Bombay, gets 1300 rupees, at Madras 1575, and at Bengal 2060. This inequality is too remarkable not to attract notice, particularly as the fact appears that the Bombay officer traverses a greater extent of country than those of either of the other establishments, with as much duty in his superintendence; while the divided state of the troops and their distance from each other must constitute the greater labour wherever it occurs. The Honourable Court have, I conceive, recognized this principle in some degree, as well as the difference, by their late orders; though the fact might not have been so fully brought before them, that exhibits the Bengal officer's receiving 760 rupees, and a Madras one 275, more than that of Bombay, for a duty which as to personal exertion is the same, and as to professional skill or education can give no preference, as might be urged in other lines; and, arguing from the scale of allowance the Honourable Court fixed for the Medical Board of the three Presidencies, I should affirm they had no intention to make such a disparity with regard to the other classes.

Medical Supplies.

The system at Bengal and Bombay is precisely the same; that is, the supplies are made by the Commissariat to the European and Native hospitals, and I believe the same regulation is established in the Madras army; while the three Presidencies have their peculiarities, arising in a great measure from the local situations of their territories. The Bombay army has the smallest scale for the several diets of patients, and only makes hospital stoppages from the European, at a fixed and indiscriminate rate for all ranks; while in Bengal these stoppages are calculated according to ranks respectively: and the same rule also obtains with them for stoppages to the native troops in hospital. This contrast will prove that the Bengal system is more œconomical than either of the others, where there are no deductions made to the natives in hospitals. However, it is to be remembered, that seven rupees (the pay of a sepoy) will go further in the Bengal establishment than eight rupees will at most places at the other Presidencies, except in some of the Madras territories, from the positive fact that the aliments of life and clothing for natives are from thirty to forty per cent. cheaper in almost all the stations occupied by the Bengal army.

I shall now subjoin the Report of a Medical Committee assembled at Bombay; and however ably the subject of this nature may be treated by professional persons, I must beg to dissent from some of their propositions, as far as regards comparative rank and pay, as forming part of the military establishment of the Presidency.

Report of the Medical Committee.

" *On the actual condition of all offices in the Medical branch of the service.*—For the sake of clearness, the offices may be subdivided into those of the European, and those of the Native branch of the Army; the Indian Navy; the Medical Store department; fixed Hospitals and Dispensaries; and the Civil branch of the service. The department of Vaccination and the office of the Medical Board have, as stated in rule 5, &c. of the Rules for subordinate Medical Servants, been considered distinct: these and the Native Medical School will be considered in a future Report. Each of the above-mentioned offices may properly embrace three heads of inquiry.

" 1st. The subordinate medical servants.

" 2nd. The hospital and medical servants.

" 3rd. The supplies. But of these, the first only, as being the most important, shall be noticed in this letter.

" *European army subordinate medical servants.*—These men have generally been favourably reported of; their numbers and individual pay seem likewise ample; yet in the opinion of the Committee several material defects exist in the present system. Of these, the principal are—

" *The improper terms of engagement under which these servants enter the Company's army.*—The system of indentures is radically bad; it binds an individual for five years, to what he may not after the first month like; it presents no stimulus to exertion; it cramps the power of Government in ridding the service of these men if found unworthy; and in being a form of civil compact used amongst military servants, presents an anomaly beneficial to none, and most injurious to the Government and its officers who may chance to be placed over these men. The probationary service which it is proposed to substitute for this is free from all these objections; and the discretionary power with which executive medical officers are vested, will, in giving great facilities for the immediate discharge of all indolent and worthless characters, have the effect of excluding from the service those who are not fitted for it; and the Medical Board, in having access to a knowledge of the extent of all punishments, will, on the other hand, have a power of controling any undue exercise of authority on the part of medical officers.

" *The mode in which these servants are educated.*—Placed in the best of all schools for rearing up men to be afterwards employed in ministering to disease, namely, in large hospitals, and constantly engaged at the bedsides of their inmates, the subordinate medical servants have in attainments fallen short of what might have been expected from them, for two causes—1st, The want of instructors, and of a properly digested system of instruction. 2nd, The want of objects of

ambition being held out to these servants, and the want of legitimate modes of selection of the individuals entitled to rewards or places. On the first of these the Committee would observe, that although the attainments of these men perfectly fit them for acting under medical officers, and carrying their orders into execution, yet to it, it seems that had one medical officer in each regiment been made responsible for communicating instruction of certain kinds to these men, they might have been fitted to be very efficient substitutes for commissioned medical officers in the provision of medical aid to small charges, or in giving aid of a higher description than what they can now afford to these officers, when from sickness or other causes there existed a necessity for the obtainment of such aid. Their attainments now are of a description which perfectly fit them for all hospital duties as subordinates; but the system of education which the Committee has sketched out, will, if properly executed, fit them for duties of a much higher order, will on many occasions, and in many situations, much facilitate the arrangements of Government, and this at a cost which, compared with the advantages obtained, is trifling and not worthy of notice. On the second clause the Committee would beg to state, that this has been supposed rather than actually ascertained.

" The Committee has learnt that many of their servants after promotion to the higher grades have relaxed in their endeavours to merit the approbation of their superiors, have fallen into error and guilt, and ultimately have been expelled the service. To very rapid promotion, caused by the great demand for this class of men, this may in part have been owing; and some may have attained to places for which they had not been qualified, and from which, on this being made evident, they have been expelled. Yet the Committee feels assured that a great want under which this department laboured, was the non-existence of some places of comfort, light duty and emolument, to which, as a reward for long and faithful services, they might have looked. Another defect is the want of competition among these men to attain to these places. That however, in the then state of the service, was caused by the great deficiency of this class of men, and to supply which many individuals were doubtless promoted who would not have been so, had there been a large body to select from. A system of instruction is laid down, for the superintendence of which remuneration is given to individuals, thus rendered responsible for a correct performance of their duties; the ascertainment of this performance as to its being correct or not, is not left to the simple report of an officer of controul, the superintending surgeon, but may be made out by the number of subordinate medical servants who pass examinations on certain branches of education, before committees composed of medical officers, who, in the performance of their duties, have certain rules to guide them, and are free from all bias and above all controul in these matters. Hereafter (should this system be adopted) it will be easy to learn from what officer the best and the most speedily instructed subordinate medical servants have proceeded; it will be seen what officer has his duty most at heart, by the length of time which it is reported the pupils and others have been in the service, and consequently under his instructions; and from this circumstance alone, without any reference to medical authorities, Government may come to just conclusions as to what officers have deserved their remuneration; while from those who do not seem to have deserved it, the care of the subordinate medical servants may be taken, either by their being placed under the charge of another officer of that regiment, or by being in a body removed therefrom and placed under the medical officer of another regiment who may have done his duty in a satisfactory manner, and who in such case should, if superintending the instruction of the pupils of both corps, have, in addition to the pay for his own charge, half the sum (50 rupees) on account of the pupils of the other regiment.

" With regard to the pupils, their admission into the service in the first instance, depends on examinations passed before committees of medical officers, free from all bias in their favour; their continuation in the service depends on their own good behaviour, and on a sedulous attention to their duties, and to the instructions given them; and their promotion (if they are thought worthy of being retained in the service) depends entirely on their own application and exertions, together with their good behaviour as reported on by their superiors.

" The places of trust and emolument are open to all who prove themselves qualified, and nothing but bad behaviour can prevent a qualified person from rising to them.

" In thus presenting abundant stimulus for exertion to those men of abilities who will rise in every line, it presents, in its graduated scale of pay (on a previous report of a correct performance of duties), for remuneration to those men, who, though not possessed of brilliant parts, may perform their duties in a sufficiently proper manner, and behave respectably. Thus therefore, although these men may not attain to the highest situations in the service, there is a stimulus held out to them to perform their duties correctly, and to merit the approbation of their superiors.

" *Native army subordinate medical servants.*—Several important defects exist in this department. And of the servants in it, only one-half have been reported in every respect fitted for their duties; of the remaining half, four-fifths are unfitted by reason of their ignorance of English reading and writing; and the remaining fifth, though possessed of such knowledge in a certain degree, is, either from its being very limited, or from other causes, only qualified to a certain extent. Many of these servants must, from the above circumstances, be but very indifferent compounders; and several are reported as being imperfect dressers. The inquiries

of the Committee have settled the cause of this great disparity of attainments between the servants in this, and in the European army. Almost all of those men who are favourably reported of, have either been brought up in the hospitals of the European army as apprentices, or their education has, like that of apprentices, been acquired in these hospitals: this fact will likewise explain the cause of the number of imperfect dressers in this department; the men so reported have generally been brought up in native hospitals; and these institutions, with very few exceptions, are not at all fitted to form schools of instruction. More of the practical parts of the duty of subordinate medical servants may be seen in a month in an European, than in a year in most Native hospitals; service in the former, too, divests of prejudice, gives habits of self-possession and confidence, and in every respect quickens and excites the faculties of all engaged about them.

" All that has been said refers to the individual attainments of the men of this class; but even as a whole this department is deficient.

" Detachments, when sent out, are frequently supplied with insufficient, and at times with no subordinate medical servants whatever; for it has not unfrequently happened, that there were none to send out, and in consequence hospital menials, who had acquired a slight smattering of some parts of the duties of subordinate medical servants, have been detached to perform their duties.

" The pay of the men of this department is quite inadequate, as remuneration, to those who are in every respect fitted for their duties; and much of the deficiency in number of such men may be attributed to this cause.

" The defects of this branch of the service may be remedied in the following manner. The want of sufficient knowledge of English reading and writing may be obviated by a greater strictness in the admission of candidates into this class. Over the duty the quarterly committees are placed; and by a proper performance of their functions, no servants can hereafter be imperfect in these necessary branches of information. By constituting European hospitals the schools for the whole service, the subordinate medical servants of the native army will hereafter be qualified to a greater extent than they could possibly have been, had they been reared in their own hospitals. All that was stated in the remarks on the advantages of the proposed system to the subordinate medical servants doing duty with European troops, is applicable to the men serving in this and all the other departments of the public service.

" *Indian navy subordinate medical servants.*—As the men of this department have only been posted to it very lately, and as many of the vessels are at considerable distances from the Presidency, the Committee has not been able to institute very particular inquiries regarding these servants, but has taken for granted their being efficient both as a department and individually. It must, however, remark, that it is very doubtful whether any of the subordinate medical servants should ever be employed in the Indian navy, excepting as substitutes for medical officers. It entertains fears, that servants trained up at some cost, with much care, will by being posted to this branch of the service, from having little or nothing to engage their attention, (the average number of sick even in the largest vessels of war being only eight, including both natives and Europeans,) become idle, ignorant and vicious; in which, from the circumstance of junior medical officers being employed in the navy, they are not so likely to be checked as in other branches of the service. The Committee would therefore recommend a return to the former system, viz. that of granting an allowance of fifteen rupees monthly to medical officers for procuring a compounder; for which sum a person calculated for a performance of all the duties required of him can easily be had, and in whose discharge, should he behave badly, medical officers will have no trouble, and suffer but little inconvenience. The men at present in the navy cannot be got rid of, excepting by sentence of a court-martial; and every such sentence must, should its cause originate as above stated, give much uneasiness to the medical officer.

" *Store department subordinate medical servants.*—These men have generally been favourably reported of; but one great defect exists, in their being retained too exclusively for these duties: to remedy this, the Committee would recommend a frequent removal of the inferior grades of servants in this branch, to and from hospitals, so as to prevent their becoming, by long and habitual employment in one branch, somewhat unfitted for the others in the service.

" *Fixed Hospitals and Dispensaries, and the Civil branch of the service.*—To the servants in these departments, nearly the same remarks apply which have been stated in reporting the servants attached to the native army. In adverting to the rules for the subordinate medical servants which accompany this, the Committee would beg to remark, that in new-modelling the system for the rearing up of these men, it has been actuated by several considerations.

" 1st. The comparative efficiency of the men reared in European hospitals on the system which now prevails.

" 2nd. The opinions of the oldest medical officers in the army being in favour of some such system.

" 3rd. This being actually the system of education at work in the most celebrated schools for the rearing up of medical men, and combining in itself many requisites for a proper fitting of individuals for medical duty. For its success, the Committee is of opinion, that it is indispensably necessary that it should be adapted *in toto* to it: it seems impossible that any part of it can be adopted with advantage; either the whole must, as a whole, be introduced, or the present system had better not be altered.

" Its advantages over that system seem to be the following:—

" 1st. Greatly increased acquirements of the subordinate medical servants, with little increase of cost.

" 2nd. Great simplicity in the conduct of all medical duty connected with this class of men.

" 3rd. Great increase in the number of qualified subordinate medical servants to be drawn from in case of any emergency. At present above 2,800 rupees are disbursed monthly on account of servants, whose duties are strictly those of this class of men*, but whom the Commissariat is supposed to supply (yet how inefficiently so, medical men can best testify), and over whom Government has no controul. This sum will, on the proposed system, be entirely disbursed on account of subordinate medical servants, of whom rolls are kept, concerning whose attainments and fitness there will always be the fullest information, and over whom Government and its officers will have the most unlimited controul.

" 4th. Better behaviour of these servants will be secured. From the mode of engaging them originally; from the power given to medical men to discharge all who misbehave; from committees discharging all who are indolent, or not apt at their studies and duties; and from the numerous checks imposed on improper behaviour by the rules for the conduct of these men, this must result.

" 5th. From the pay of the lower grades being small, and all increase thereto dependent on their attainments and behaviour, and from the greater number of places of emolument by this system laid open to deserving men, extravagance in the outset of their service is guarded against, and powerful inducements for correct behaviour held out to them.

" From finding it not adapted to the subordinate medical servants, clause 3rd has been considerably modified, and instead of two, six classes have been constituted. On the principles laid down in clause 4th as a foundation, has the whole superstructure of this class of public servants been raised.

" No servant can be promoted from the lowest grade, even without meriting such promotion; seniority alone will do nothing for one of these men; a certain ordeal must be passed through, without which no individual can even continue in the service beyond two years; and if found worthy of being continued in it, he cannot rise one step further without meriting such rise by possessing certain qualifications, without which no conduct however good, no service however long, and no recommendations however powerful, either in themselves or in the source whence they emanate, ought to procure him increase of rank." With regard to the " Class of Merit," the institution of such clause inculcates, on this system, that *every superior grade forms " a class of merit " to the rank below it.*

Pay Table.

Rates of Pay of the Subordinate Medical Servants, per Month, in Field and Garrison.

		Garrison.			Field.			
		Pay.	House Rent.	Total.	Pay.	Full Batta.	Tentage.	Total.
Head Apothecary		110	25	135	110	40	35	185
Apothecary	1st Class, after 24 years	90	20	110	90	30	30	150
	2nd Class, after 16 ditto	80	20	100	80	30	30	140
	3rd Class, after 8 ditto	70	20	90	70	30	30	130
	4th Class, under 8 ditto	60	20	80	60	30	30	120
Assistant Apothecary	1st Class, after 24 ditto	56	10	66	56	20		76
	2nd Class, after 16 ditto	49	10	59	49	20		69
	3rd Class, after 8 ditto	42	10	52	42	20		62
	4th Class, under 8 ditto	35	10	45	35	20		55
Dressers	1st Class, after 24 ditto	40	4	44	40	9		49
	2nd Class, after 16 ditto	35	4	39	35	9		44
	3rd Class, after 8 ditto	30	4	34	30	9		39
	4th Class, under 8 ditto	25	4	29	25	9		34
Assistant Dresser †		20	4	24	20	7		27
Compounder		10		10	10	5		18
Pupil		6		6	6	3		9
With either rations, or 5 rupees compensation, according to their cast.								

Remarks by Lieutenant-colonel Frederick.—The Head Apothecary has nearly the same allowance as a Deputy Assistant Commissary; the Apothecaries have more than Conductors, and above Subedars of the first class; the Assistant Apothecaries more than Sub-conductors and Subedars of the third class, and Serjeant-majors and Quarter-master Serjeants.

* All servants are by the regulations selected by the medical officers themselves and paid *only* by the Commissariat.
(Signed) Edw. Frederick.

† Only to be granted when unprovided with quarters, as in Medical Store Departments, &c.—Assistant Dressers, if European, East Indian, or Portuguese, have 20 rupees *per mensem* in native corps; if in European, 15 rupees and ration of full diet.—*Vide* Garrison Pay.

Irregulars, Horse and Infantry.

There is, I believe, only one opinion on the subject of this class of troops. In war they merely thin the ranks of the enemy by remaining in our pay, and in peace their occupation is gone, as they cannot act as foragers,—consequently they are supernumerary, indeed superfluous. The horse may be occasionally employed as mounted police, but the infantry have never shown that they possessed common firmness for action, and consequently bring the regular troops into disrepute by their conduct; for the inhabitants of India seldom view them in any other light than as police peons, to assist in the collection of the revenue, or duties of that description.

There are no situations in which the native cavalry and infantry could not be employed, with propriety, (I do not mean any civil or police duties,) with more effect than is now performed by the irregulars. The troops of the line are now never called upon to do any other duties than being guards to prisons; the system of Berkundaz has relieved them from all others. The expense was enormous *, without a corresponding degree of efficiency: if troops are absolutely required for a temporary service, they should be regulars raised under certain conditions of being disbanded when no longer required, officered from the line; the officers also being subject to a similar obligation to return to their former regiments at the expiration of the stated period, during which they should be selected and receive some addition of pay, as if they had been transferred into a newly raised regular regiment. As a proof this is feasible, we have only to look at the rifle corps at Madras, acknowledged by every one who ever saw it on service to be fully equal to the best troops of the regulars †; and yet this corps, from the principles on which it was raised, can be reduced at a moment's warning, and the officers ordered to join their respective regiments. The neglect of some rule or precaution of this kind has occasioned the mischief of a superabundance of troops in one Presidency, and a deficiency in another, and has consequently placed the Government in the embarrassing situation of having, after the war is over and the whole of India in a state of the utmost tranquillity, a supernumerary number of regular regiments that they know no mode of reducing, without serious injury to the fair promotion and prospects of their officers, who have thus at once, for a particular emergency of the moment, been promoted into newly raised regiments, with the tacit sanction of being for ever kept up on the same footing as the old regiments. Both Bengal and Madras are exactly in this predicament: as for the greater number of their regiments, they have been raised at different periods to meet the particular emergencies of the times which have now ceased to exist, without any reference to the general state of the service. The evil does not rest here, as a pressure on our Indian finances; for with the increase of troops of all kinds an immense increase has been made simultaneously to the staff and departments of every kind, as well as to the expense of the offices. This subject might be gone into at great length with obvious utility; but I trust I have said enough to point out not only the necessity of alteration, but the germ of the existing evil, with the progressive mode with which it has operated, and now appears almost incurable. At any rate the whole of the irregulars ought to be disbanded: this will to a certain degree open out some employment for the troops of the line, who should if possible, and particularly our Indian army, from its singular constitution—be kept as much engaged or employed as possible: its tone will always be the more healthy for active occupation; for few maxims apply more forcibly to classes of men than the one pointing out the evil of idleness does to large military bodies; for though our sepoys are the most easily managed and tractable soldiers in the world, they are still strictly mercenaries governed by foreigners, with whom they possess no community of domestic or political ties such as exist in the armies of all other nations. It is true we require a very large body of them, which could be kept faithful to us by common favour to their prejudices, and security to their families. By these simple means their affections would be commanded, the native powers would gradually subside into peaceable principalities, our own civil police would gain strength, and the idea of so large a regular force being necessary, merely to preserve the tranquillity of our own provinces, would gradually die away, and the army with its reduced numbers would be compact and efficient to repel foreign invasions.

Military Bazars.

The Bazars were taken from the Commissariat on the Bombay establishment, which was formerly like the Bengal and Madras system, from the idea that the Commissariat being a supplying department, ought to have no influence in the market whose prices current were to check their own charges. There is no arguing against a plan that separates check from supply, but it appears to work well at the other Presidencies; and if there be an evil in it, I doubt that it produces a commensurate efficiency, while the extra expense is evident; and is certainly not so good a mode in the field, where the spare Commissariat cattle are employed to bring in supplies that keep down the price of the necessaries of life to the soldier;—at all events the bazar collections generally equal the charges, which in one sense would be a revenue to Government, and

* Upwards of 96 lacs.

† It has lately been made a regular corps by transfer to the line.

increase the surplus amount of the collection, which the bazar superintendant's salary would diminish. And as I fully concur in the experienced opinions of Sir John Malcolm for the conduct of the bazars of an army, I prefer the reasons and arguments used by him, as possessing clearness and force, in recommending the establishment of one uniform system throughout the Indian army. They are as follows:—

"The best and indeed the only mode of supplying a bazar, which is so important a duty in an army in this country, is by every means to encourage the villagers to bring their grain and other articles to market, and to levy no customs on the grain and necessaries of life, to give an efficient protection both to the Brinjara carriers, and to make the bazar perfectly free*. General Wellesley, whose camp was better supplied probably than any I have ever seen, gave the greatest attention to this point. He resisted all applications (and such were made daily) to limit the prices of the different articles brought to his camp, and he indeed proclaimed that all were free to ask what prices they chose for either grain, sheep, or cattle: the consequence was, that the competition which the rigid observance of this just principle created, filled the bazar, and the price of grain and other articles, though high, was almost always lower in his camp than in the towns in its immediate vicinity. Besides those sources of supply which I have specified, there is another of a very indefinite but considerable extent: this is obtained through the exertions of the apparently superfluous and unemployed followers of the camp. These accompany every party sent out to forage; and when on those parties on the line of march, they purchase or find grain †, and if they cannot get that, gather fire-wood which they sell in camp, and by these and such like means, not only obtain their own livelihood, but contribute in no small degree to the general stock of supply; and a camp is often much indebted to the activity of those numerous followers, which at first view seem an incumbrance likely to impede instead of prompting its power of movements: but the fact is, an Indian army cannot march any distance without every resource within itself, as it may frequently have to pass large tracts of country which, if not a desert, are yet totally unequal to its supply; and it is from this cause that these armies have such an immense train of followers, which, as Colonel Derwin observes (in his Narrative of Lord Cornwallis's campaign), make them look not so much like an army, as a nation emigrating guarded by its troops.

"A well regulated and well supplied bazar is the most essential point; for it is on it that success or failure in military enterprises in India as often depends as on the valour and discipline of the troops. I speak from much experience and much attention to the subject, when I state that the maintenance of this main-spring of our operations, is the most difficult part of a commander's duty. It embraces much beyond the mere feeding of the soldiers or the followers of an army, but that, even in times of difficulty, depends chiefly on the mode of obtaining supplies. Gates are opened or shut upon our Brinjaries and Bazarmen, as there is confidence or alarm in the country. And the inhabitants of this province (Malwa) have been so accustomed to the abuse of military power, that they cannot believe that it is ever accompanied by the virtues of moderation or justice: years must pass before they will understand the true character of British rule.

"The Commissariat officer has always had the sole conduct of the bazar and police duties with the Madras troops.

"The sale of liquor and intoxicating drugs form the only sources from which any revenue is derived from the bazar; all other articles are exempt from duty; and it is the chief object to increase the number of shopkeepers, particularly to induce substantial men of the country to settle in the bazar, as on them, as the natural mediums, the chief supply of the force greatly depends.

"The usage of the Bombay army with regard to the management of their bazars, is different from that of Madras; an officer is appointed to conduct the duties who has no connection whatever with the Commissariat. The market is free; but, as in the Madras military bazars, spirits and noxious drugs are taxed, and sold under severe restrictions.

"I have for many years devoted much of my time to military bazars, and experience has led me to believe that no system has succeeded better than that of Madras, where they are placed under the Commissariat. The combining different branches of supply under one authority, enables the Commissariat officer (in communication with the officer commanding the

* "On the manner in which these regulations are carried into execution, everything depends; and the Commissary of bazars should be one of the best, most active, and honourable men in the service; and in large armies his allowance should be adequate to his responsibility. The same person that has charge of the bazars may have the control of Brinjaries, and on his ability and integrity the supplies will greatly depend."

† This requires explanation. During war, the country through which an army has to pass, is often deserted; the inhabitants bury their grain in pits, which men skilled in the search soon discover. As an instance of the great supplies to be obtained in this manner, I may only mention that I was able during the whole of the siege of Seringapatam to support six thousand of the Nizam's infantry (who acted in line with the army), from the grain discovered in this manner. I gave the *lestaries*, or idle followers of the Nizam's camp, protection to prosecute their search after the buried grain, and we shared equally what was found; and from the success that attended, the corps was not only supplied without expense, but the burden of its support taken off the general store, on which it must otherwise have fallen.

field force, under whose order he is placed,) to regulate the quantity of grain carriage, agreeably to his practical knowledge of the efficiency of the bazar with the army: but it is necessary to observe, that I chiefly refer the success of this system to the duties of the Madras Commissariat, as they relate to the carriage and issue of public grain being comparatively limited."

But as new duties have sprung up in the bazar, on this side of India, the bazar officer has become a magistrate acting under the regulations. In the Poonah cantonment, which has been extremely enlarged in its population of every description, both European and Native, he is, even with an assistant, employed for nearly six hours every day as a magistrate, and the police is, I believe, well regulated. This plan is decidedly preferable to the introduction of the civil authority into the cantonment. Events have satisfactorily proved it could only succeed by the military magistrate being immediately under, and receiving in fact a considerable support from, the general officer of the division, who probably would not take that interest in the concern, and give that efficient aid, if the officer was not subject to his direct authority. This argument however cannot apply to all subordinate stations.

With this view I consulted with a distinguished gentleman of the civil service; and after a very serious examination of the bazar regulations, we were convinced both from the excellent tendency of their several provisions, as well as facts derived from experience, that the present system has worked well, never having in any instance produced the slightest collision with the civil power; that some alterations and a few additions relative to capital crimes, in part to relieve the Court of Requests of some part of its business, the code in its proposed revised state would have a still more beneficial effect. I therefore proposed modifications as amendments to the existing regulations merely, that is, as an alteration of so much of Clause I. Sec. IX. Regulation XXII. of 1827, as Sec. I. provides for the trial of heinous crimes, and for the awarding in such cases of the punishments of death, transportation, or imprisonment beyond three (3) years, by a native General Court Martial within the Company's territories, should be rescinded; and it be provided, that when a crime of such a description as would in the judgement of the commanding officer of the station or cantonment, if proved, subject the offender to one of the above-named punishments, is committed within the Company's territories, and not more than one mile from the principal military station in the Collectorate or other military station, where native General Courts Martial have by regulations criminal jurisdiction, the commanding officer shall make over the case to the Zillah Court, which may be, in modification of the rules hitherto in force, vested with exclusive jurisdiction over the same, and will dispose of it in the same way as other similar cases.

The labour that so voluminous a Report has cost, it may well be believed has not been small, especially when the variety of sources from which the information was to be collected, and the short period for its preparation, are taken into consideration; and provided the exposition of my reasons be clear, I think that no further apology will be necessary for any apparent inattention to phraseology.

Of its merits generally, it would ill become me to speak; but there is one to which I think it may most justly lay claim,—it discusses measures, and not men. And while it contemplates with an unbiassed eye all such modifications and retrenchments as the nature of the times and rigid dictates of œconomy demand, it maintains undiminished the efficiency of the army in all its principal feelings, with its pay and allowances, and carefully avoids all injury either to the service or to individuals.

This pruning, that relieves the State while it preserves the main subject healthy and improving, can hardly, I conceive, be attained by these modifications even, that involve the abolition of some staff appointments and departmental retrenchments, numerous and deep as these last may be. In this proposition I am of course understood to include all the Presidencies, for the needful reform would not otherwise be impartial; while I conceive this a part only of an extensive plan that prepares for the introduction of a more compendious system.

My anxiety on this head has led me to allude to some past occurrences. I sincerely hope that the plainness with which I express my opinions on their spirit will meet with indulgence.

Our present state of tranquillity, and the prospect of its continuance, afford that leisure that the exciting occupations of war led us to disregard. Œconomy seems imperatively demanded for the due exercise of financial regularity, or, in plainer terms, a smaller expenditure conducted on a simpler and clearer arrangement of our accounts. Had this vital question been seriously entered on from those plain and simple maxims that appear now so obviously essential to our future existence, after the cessation of hostilities in 1818, the results would have been incalculable, and the resources of our Indian Empire would have been comparatively in a flourishing condition. Every branch of the service would long since have recovered from the effects of the necessary retrenchments; and even the war establishments might have been retained, while a few reforms in the old system would have checked those increases that have since gradually grown up. This would have left the army on its former war complement, with its proper staff. But the glow of success, and such success as ours was, would seldom allow the prudent part of our judgement its due exercise, and may be easily pardoned for such an oversight.

I am sensible of giving expression to sentiments of a nature that directly point to political

events and individuals of great eminence, who acted the prominent parts of legislators after the war, and of whom I may be deemed an incompetent judge; but a consideration of the extraordinary mixed character of affairs in this country will justify, I hope, allusions to persons that in such arduous times held both the sword and the pen, and who appear to have shone so eminently in the one capacity, and have left us only excellent theories of government in the other, that were seldom realized into financial results. Indian warfare may be said to be divided into two parts—conquest, and the reorganization of the country conquered. It will be thought by the experienced that the first is the easiest. As the time and minds of the principal actors are so fully occupied, after the conquest, with local settlements,—which upon every feeling of humanity and justice it would be inexpedient if not rash to disturb, from their deep importance to the princes and inhabitants of the subdued countries,—they could have but little leisure; and it would have been in such a situation taxing human talents and energy beyond the powers of the most capacious mind, to have expected a system of retrenchment and œconomy in detail. Whatever their intentions may have been, they were encompassed with difficulties in any and every attempt at settlement, after such a total disorganization of all rule and order; they were met at every turn by innumerable demands for rewards for service, discordant claims, favours to deserving persons, and a general adjustment of rights, property, rank, and pretensions, whether well or ill founded. However diminished our finances may have become from past events, no state of depression equal to the present could have been anticipated by the most keen and provident foresight. Some diminution might have been expected from the disappearance all at once of those princely establishments, maintained at the several Indian Courts, that gave subsistence to thousands, on the ceasing of such expenditure; but no one would have the temerity to predict that it would have reached its present depression, particularly as some of the causes that determined it, commenced their effects subsequent to that period of indiscriminate confusion.

Other reasons could be alleged for the delaying of the introduction of a retrenching system, but it would be exceeding the proper object of this Report to attempt it. I shall therefore merely advert to our situation in its widest sense, that it seems at present to require little more than a system which collects all the materials, and arranges them, subject to certain rules, making the whole act together. Method then is requisite to set the prepared machine to work and keep it so, on the principles it has been framed on. To accomplish this, we neither want zeal, information, public spirit, nor talents, but possess them in every line in every part of India. Selections could be made of men of all professions to act separately and individually, to compass the great object of arrangement and œconomy. But if those who are selected are made to act in a body, the usual objections may naturally be apprehended, that the views of some may cross or oppose those of others; and however correct each may be in its principle, still they will unhappily have the effect of altering, impeding, and in some cases even of rendering the best measures nugatory.

As the main principles for governance no doubt emanate from home, while the details comprehended in those general maxims, though perfectly understood in England, must be necessarily undertaken for execution by those executively employed on the spot, and entrusted with the local Governments,—a steady and careful management of so important a branch of financial administration as is involved in the maintenance of one of the largest armies in the world, particularly when reductions become unavoidable, is best effected by a calm and critical disquisition of its operative system, by those who are amicably disposed towards it, and must prove the most probable and just procedure, to ensure a fair and beneficial result.

The deep attention I have given the subject convinces me, that a long list of emendations still remains to be consulted, before the important and contemplated relief can be attained, in the adoption of a better system. I shall not enumerate the unnoticed parts of military expenditure, but only advert to one,—the large amount of ordnance and other stores annually indented for from Europe, as if the State were still engaged in actual warfare; or the idea of keeping up in its highest state of preparation every species of equipment in the heart of the country, as if the greater portion of it were not comprised in our own territories, and were not under civil rule or a capable Government.

I hope that the task I had undertaken will not appear a presumptuous one, in seeming to possess a complete knowledge of such large and diversified subjects; in reality I had no pretensions of the kind, but have acted, I trust, on the fairest grounds, by candidly and unreservedly offering what knowledge I had acquired during a long and unremitting series of service. But as a satisfaction to you, Honourable Sir, I can add, in accordance with your own acquaintance, the circumstance, that few have been more fortunate than myself in their opportunities, and if my judgement prove wrong, I have the proud conviction that the ideas that guided it originated from the study of the sentiments of some of the ablest and soundest men that have distinguished themselves in the field of Indian policy and finance.

I have now the honour to subscribe myself, with the greatest respect,

Honourable Sir, your obedient Servant,

(Signed) E. Frederick, Lieutenant-Colonel,
Memb. of the late Mil. Fin. Com.

Bombay,
October 1st, 1830.

APPENDIX.

To LIEUTENANT-COLONEL FREDERICK, &c., &c., &c.

Sir,

I HAVE given the most attentive perusal to the numerous papers you have shown to me; and from these, and your personal communication when at Malcolm Peyt, I deem it my duty to state the high satisfaction I have derived from the full proof you have afforded me, that your time during your residence at Calcutta was actively, zealously, and usefully employed; and that, connected with your actual and anticipated duties as Commissioner (which I observe from your letter to Government were performed in a manner satisfactory to the Governor-general), you have accumulated a body of facts upon every subject of military finance of the three Presidencies, which must prove of great utility to this Government, by enabling it to promote an object which the Honourable the Court of Directors have long had in view, of assimilating the establishments and departments of the different Presidencies, where local circumstances do not render that impracticable.

Subsequent to your departure for Bengal I have been incessantly occupied in efforts to reduce the expenses of this Presidency. No branch of expenditure has attracted more of my notice than the Military, and my personal visit to the different stations has aided Government in its establishments to revise and reduce every department, with the strictest attention to œconomy and little injury as possible to efficiency. It will become my duty to make an early report to the Supreme Government and to the Honourable the Court of Directors upon this subject, in order that these high authorities may have the whole that has been done under one view, by which they will be better able to form a judgement of its merits, than from detached details of my proceedings; for these (however different the objects) are all regulated by the same leading principles, which are—to diminish offices by combining duties, and through the reduction and limitation of establishments by the diminution of charge of unnecessary forms and documents, by instituting direct responsibility, and making checks more upon demand than supply; thus vesting that power with those who must, from their experience and personal knowledge, be able to exercise it, and whose reputation is associated with the strict performance of this most important of all duties in the œconomy of a Government.

You will observe, from a Circular from the Acting Secretary under date the 21st December 1829, and other papers connected with the subject, that a complete reform of the constitution of the different offices under this Presidency is in progress. To this I look beyond all other measures for the diffusing of education, the promotion of useful knowledge, the multiplication of efficient persons for the subordinate duties of different departments, and eventually the promotion of œconomy as well as of integrity in the subordinate branches of the public service.

I have made these observations that you may be aware of the objects I have had, and continue to have, in view, while you are fulfilling the task I wish to assign you, of examining and making a short abstract under distinct heads of all the œconomical reforms in the military department made by this Government, under orders from England or Bengal, or at my suggestion, from the 1st of November 1827, up to the date of your Report. I must also desire that you will, from the information you possess, contrast the constitution and the whole of the œconomy and efficiency of our military establishments and departments with those of Bengal and Madras, giving such opinions as your experience and knowledge dictate upon each. This Report I must desire as early as you can prepare it, and in as concise a form as it can be rendered; and to enable you to frame it, the chief Secretary will be directed to give you access to all records, and to call for any account or statement you require from the different public departments.

I have the honour to be, &c.

(Signed.) John Malcolm.

This full and able Report from Lieutenant-Colonel Frederick on the Military Establishment of the different Presidencies, their actual constitution, the reforms that have been made; the contrasted view of those of the different Presidencies and general financial results,—entitles that officer to the best thanks of Government. It contains a great body of information, which his duty as a Commissioner at Bengal could alone have given him an opportunity of collecting; and the deductions and comparisons made from the facts accumulated have great value, as coming from an officer of such experience and judgement.

I am generally agreed with Lieutenant-Colonel Frederick in the sentiments he has expressed. I shall therefore make only a few remarks upon his letter.

I concur with Lieutenant-Colonel Frederick in thinking it quite practicable, and I am sure it would be advantageous, to extend the same principles and rules to the Commissariat over all India.

I do not concur with Lieutenant-Colonel Frederick in all his opinions regarding grass-cutters for the cavalry,—I deem them essential to that branch in the field; and in India, active followers who supply forage and provisions (though difficult perhaps to keep in order) add to the efficiency of an army.

One of the principal duties of the sappers and miners in India, as in England, is pontooning; and there are many reasons which render me of opinion this part of the corps should have superior pay. The engineer soldiers in England, with no officers but their own, are practised in all infantry duties, and it is deemed a great improvement in the efficiency of that branch. The engineers for the Company's army, who are instructed at Chatham, learn this part of their duty, and only forget it when they have no practice in India. It is of consequence to be maintained; and for this and other reasons I should be sorry to see infantry officers introduced into this corps on any ground but an actual deficiency of numbers in those of the engineer branch.

The grounds upon which tentage was given to officers of native troops and not to those of European corps, though good, is certainly in some respects invidious. It must be recollected, however, that officers of native corps are frequently liable to move out at short warning, European corps seldom and almost always with warning: an allowance of this nature, not often wanted for the specific purpose for which it was given, becomes part pay, and so far is most objectionable. If this question comes under consideration in England, and consideration is given to it,—I think a sum equal to half that before granted at Bombay on a corps being ordered for service, would be of more real service to the officers, and more œconomical to Government, than any other mode. This amount, if given to officers not in the field every two years, would only be equal to one third of the amount struck off, and might not be paid until the certificate of the commanding officer was produced of the party to whom it was given having his camp equipage. This would effectually provide against the distress and difficulty which must occur whenever a European corps is ordered to move under the present system; for the junior officers say, and with justice, they have not money to enable them to purchase a tent.

I am glad Lieutenant-Colonel Frederick has given the first Report of the Medical Committee, in whose plan of education and employment of subordinate medical servants I fully concur.

I have in several recent occasions given my sentiments on Irregular Horse. They are at variance with those of Lieutenant-Colonel Frederick and of many others for whose judgement I have a high respect. But more experience than probably any man in India, of the utility of this branch, leads me to consider them a most œconomical and essential branch of our military strength;—and political as much as military considerations satisfy me, they cannot be enlisted and discharged as circumstances suit, without the loss both of their efficiency and attachment:—but I have elsewhere given my reasons at great length on this subject. When troops are wanted, the best mode is, as Lieutenant-Colonel Frederick suggests, to raise extra corps which with a commandant and two staff are fit for all ordinary service. If required in the field, officers can be named. Such corps are œconomical, and can be raised or disbanded without that distress to individuals and embarrassment to Government which attend reductions of regular regiments.

I have stated all that appears necessary on this Report; but cannot close without again repeating my sense of the obligation which Government owe to Lieutenant-Colonel Frederick for this valuable communication,—a copy of which, with the letter calling on him for it, should be sent to the Supreme Government and to the Honourable the Court of Directors, with a strong commendation to the latter to distinguish by their particular notice an officer who has with such zeal, ability, and independence of character, come forward at this moment of difficulty, with information and propositions well calculated to promote the objects of œconomy, without any serious injury to those of efficiency, throughout every branch of the army in India.

(Signed.) J. Malcolm.

Bombay, 23rd November, 1830.

Table No. I.—Comparative Statement of the Rations issued to Europeans on Ship-board proceeding on Foreign Service.

Names of Provisions.	Bengal: Weekly.	Madras: Weekly.	Bombay: Weekly.	Names of Provisions.	Bengal: Weekly.	Madras: Weekly.	Bombay: Weekly.
	lbs. oz.	lbs. oz.	lbs. oz.		lbs. oz.	lbs. oz.	lbs. oz.
Biscuit	7 0	4 10⅔	7 0	Beef	2 5¼	2 5¼	2 5
Rice	3 8	0 0	3 8	Pork	2 0	2 0	2 0
Flour	1 0	3 8	1 0	Firewood	28 0	14 billets	28 0
Raisins	0 4	0 8	0 4	Onions	0 0	0 7	0 0
Pease	1 8	1 8	1 8	Spirits.... Drams	14	14	14
Sugar	0 12	1 0	0 12¼	Vinegar..... Pint	¼	½	⅛
Tea	0 2	0 1½	0 3⅞	Water .... Gallons	7	5¼	7
Pepper	0 1	0 0	0 1 5/10	Limejuice..Drams	7½	0	7½
Mustard.....	0 2	0 1½	0 2				

The preference is to the Bengal ration, which is also that of Bombay with little variation.—Pepper is necessary with the pease, and not onions, which do not keep nor mix up with anything else; and limejuice is absolutely requisite as an antiscorbutic; while one gallon of water is by no means, particularly in a hot climate, too much for a European when fed on salt provisions, four pints out of the gallon being required for cooking: but instead of one pound of flour per week it should be 3½ pounds per week per man, and the 3½ pounds of rice be discontinued, as the rice is of little use to Europeans, and to reduce the pound of biscuit to three-fourths. This will improve the ration, while the expense is decreased.

TABLE No. II.—Comparative Statement of Personal Appointments to Europeans on Ship-board proceeding on Foreign Service.

Names of Stores.	Bengal.	Madras.	Bombay.	Remarks.
Hammocks with beds complete for each man	1	1	1	(A). The Bombay troops are in every situation provided with camp kettles, covers and dishes, in the proportion of about 13 of each kind for every hundred men; consequently these articles are never necessary on foreign service.
Cumblees ditto	1	1	0	
Tin plates ditto	1	1	(A)	
Tin bowls, for 3 men	1	1	(A)	
Tin mugs for each man	1	1	1	
Canteens ditto	0	1	1	
Tin kettles for 5 men	0	1	(A)	(B). These articles are shipped in each transport, agreeably to the number of troops she carries, and not more than one set for a transport, which was found sufficient on these occasions.
Tin pans ditto	0	1	(A)	
Wooden spoons ditto	0	1	0	
Haversacks for each man	0	1	1	
Meat forks for 50 men	1	0	0	
Spirit measures, sets for 50 men	0	1	(B)	

The Bombay system of providing the soldier in every situation with camp kettle, covers and dishes, may be considered expensive at first sight; but in the end, from its utility in a military point of view, is certainly the best, as it leaves the soldier quite unincumbered, and consequently always ready for his duty. It will not, I believe, be any increase at Madras, as earthen pots, chatties, &c. are issued there in garrison; and at Bengal it would be about 8000 per annum. If the whole of the European troops were embarked for one year on the Bombay Presidency, no additional expense would be incurred, as the men get kettles, &c. at all times.

TABLE No. III.—Comparative Statement of the Rations, issued to Europeans on Shore, marching on actual Service.

Names of Provisions.	Bengal: per diem.	Madras: per diem.	Bombay: per diem.
	lbs. oz.	lbs. oz.	lbs. oz.
Biscuit, or	1 0	0 12	1 8
Rice	2 0	1 5	1 8
Fresh Meat	1 8	1 8	1 8
Salt	0 2	0 $2\frac{5}{8}$	0 2
Wood	3 0	5 billets	4 0
Spirit..... Drams	2	2	2

The ration in the table marked [*A*] is no more than sufficient for a man on a march, when his appetite increased by strong exercise becomes keener, and requires more sustenance to recruit his physical strength. It is to be remembered that the soldiers have to maintain their cooks and many of their women who accompany them; and in all calculations of this nature, something more than the mere quantum of food to be consumed by a single individual must be provided for. But if on the contrary no kind of allowance is made on this head, the pay of these followers must be increased,—the effects of which will prove by no means inconsiderable to the soldier, particularly where labour is so dear as it is on the western side of India. It appears that the Europeans at Madras never receive biscuit but when the rice is bad, the advantage of which might be questioned; and I certainly would not advise its adoption at the other Presidencies, especially as the quantity is only $\frac{3}{4}$lb. of bread: a healthy man marching can scarcely manage under one pound of bread. This opinion might be supported from the practice of medical men, who allow their patients in hospital $\frac{3}{4}$lb. However, if soldiers are to have the same rations while stationary as marching, and it is intended that the increase of expense on one establishment should be counterbalanced by a corresponding reduction on the other, I should in that case give the peference to the Bengal scale;—but I still think the proposed modification preferable as shown in the table marked [*A*.]

TABLE [*A*.]—Statement of the proposed Rations to Europeans Marching and Stationary.

Field Service or Actual Marching. Ration Weekly.		*Stationary Cantonments of Full or Half Batta.* Ration Weekly.	
$\frac{1}{2}$lbs. of meat	7 days.	1lb. of meat	7 days.
1lb. of biscuit or bread	7 ditto.	$\frac{3}{4}$lb. of bread	7 ditto.
$\frac{1}{4}$lb. of rice	4 ditto.	$\frac{1}{2}$lb. of rice	3 ditto.
$\frac{1}{2}$lb. of flour	3 ditto.	$\frac{1}{2}$lb. of flour	4 ditto.
4lbs. of wood	7 ditto.	2lbs. of wood	7 ditto.
1oz. of salt	7 ditto.	$\frac{1}{2}$oz. of salt	7 ditto.
2 drams of spirit	7 ditto.	1 dram of spirit	7 ditto.

Salt meat never to be issued but on occasions of emergency, and then only one pound.

TABLE No. IV.—Comparative Statement of Rations issued to Natives on Shore, when on Foreign Service.

Names of Provisions.	Bengal: per diem.	Madras: per diem.	Bombay: per diem.	
	lbs. oz.	lbs. oz.	lbs. oz.	The Bengal scale is here the best, as turmeric is merely for colouring the rice: nor should tobacco be given except when the men cannot provide themselves with it in the bazar.
Rice	2 0	2 0	1 8	
Dholl	0 4	0 4	0 8	
Ghee	0 2	0 2	0 2	
Tobacco	0 0	0 2	0 0	
Turmeric	0 0	0 $0\frac{1}{2}$	0 0	
Salt	0 $0\frac{3}{4}$	0 $0\frac{3}{4}$	0 2	

TABLE No. V.—Comparative Statement of Rations issued to Hindoos who do not cook on board ship when proceeding on Foreign Service.

Names of Provisions.	Bengal: per diem.	Madras: per diem.	Bombay: per diem.	
	lbs. oz.	lbs. oz.	lbs. oz.	
Flour	0 6	0 8	0 0	
Churah	0 12	0 0	1 4	
Gram	0 10	0 0	0 12	One chest of tea and five quarts of limejuice are allowed at Bengal for 200 men when the voyage exceeds two months.
Ghee	0 2	0 $1\frac{7}{8}$	0 2	
Oil	0 $1\frac{1}{7}$	0 0	0 0	
Tamarind	0 4	0 $1\frac{7}{8}$	0 2	
Sugar	0 4	0 1	0 4	
Salt Fish ....No.	0	1	0	I should prefer the Bombay scale being established, as it was formed from experience on expeditions of considerable extent, and found to answer for the last twenty-eight years. To Egypt, the Persian Gulf, and coast of Arabia, Hindoos cannot cook on board ship, consequently they do not require either flour or wood, and as paun-leaves spoil very soon, they with the kaut and chunam are quite superfluous:—as a proof, nearly all the kaut shipped for the expedition with General Keir was returned to Bombay, and the chunam was used to whitewash the transports.
Salt	0 1	0 $2\frac{1}{10}$	0 1	
Chillies	0 $0\frac{1}{4}$	0 $0\frac{5}{24}$	0 $0\frac{1}{9}$	
Pepper	0 0	0 $0\frac{5}{24}$	0 $0\frac{1}{8}$	
Coriander seed	0 0	0 $0\frac{5}{24}$	0 0	
Cinnamon seed	0 0	0 $0\frac{5}{96}$	0 0	
Garlick	0 0	0 $0\frac{5}{72}$	0 $0\frac{1}{4}$	
Onions	0 0	0 $0\frac{5}{72}$	0 2	
Turmeric	0 0	0 $0\frac{2}{72}$	0 0	
Tobacco	0 2	0 $1\frac{1}{4}$	0 2	
Beetlenut....No.	2	$\frac{5}{8}$	2	
Paun-leaves..No.	10	0	0	
Chunam	0 $0\frac{1}{4}$	0 0	0 0	
Kaut	0 $0\frac{1}{8}$	0 0	0 0	
Firewood	1 0	$1\frac{1}{4}$ billet	0 0	
Water....Gallons	1	1	1	

TABLE No. VI.—Comparative Statement of Rations issued to Natives who cook on board ship, proceeding on Foreign Service.

Names of Provisions.	Bengal: per diem.	Madras: per diem.	Bombay: per diem.	Names of Provisions.	Bengal: per diem.	Madras: per diem.	Bombay: per diem.
	lbs. oz.	lbs. oz.	lbs. oz.		lbs. oz.	lbs. oz.	lbs. oz.
Rice	1 8	1 12	1 6	Cummur seed	0 0	0 $0\frac{5}{24}$	0 0
Dholl	0 4	0 $4\frac{1}{5}$	0 6	Garlick	0 $0\frac{1}{4}$	0 $0\frac{5}{72}$	0 $0\frac{1}{4}$
Gram	0 2	0 0	0 2	Onions	0 $0\frac{1}{4}$	0 $0\frac{5}{72}$	0 $0\frac{1}{4}$
Ghee	0 2	0 $1\frac{7}{8}$	0 2	Turmeric	0 $0\frac{1}{4}$	0 $0\frac{5}{72}$	0 $0\frac{1}{4}$
Oil	0 $1\frac{1}{7}$	0 0	0 0	Tobacco	0 2	0 $1\frac{1}{4}$	0 2
Tamarind	0 4	0 $1\frac{7}{8}$	0 2	Beetlenut....No.	2	$\frac{5}{8}$	2
Sugar	0 4	0 0	0 4	Paun-leaves No.	10	0	0
Salt Fish ....No.	0 0	1	0 8	Chunam	0 $0\frac{1}{4}$	0 0	0 0
Salt	0 1	0 $2\frac{1}{10}$	0 1	Kaut	0 $0\frac{1}{8}$	0 0	0 0
Chillies	0 $0\frac{1}{4}$	0 $0\frac{5}{24}$	0 $0\frac{1}{4}$	Firewood	2 0	$1\frac{1}{4}$ billet.	2 0
Pepper	0 $0\frac{1}{8}$	0 $0\frac{5}{24}$	0 $0\frac{1}{8}$	Water ...Gallons	1	1	1
Coriander seed	0 0	0 $0\frac{5}{24}$	0 0				

The Madras scale for this class of men is the best. It includes everything necessary for currie and kedjeery of people cooking, omitting those articles which are only useless delicacies; such as parched gram, sugar, and oil; while paun will not keep, which with the kaut and chunam are a needless expense.

TABLE No. VII.—Comparative Statement of the Personal Appointments allowed to the Native Troops proceeding on Foreign Service.

Names of Stores.	Bengal.	Madras.	Bombay.	Names of Stores.	Bengal.	Madras.	Bombay.
Cumblies per man	0	1	0	Beastie bags for 25 men	0	1	0
Canteens ditto	0	1	1	Towahs for 10 men ...	1	0	0
Beetlenut-cutters for 50 men	0	1	0				

Preference here should be given to the Bombay mode; as canteens are not only necessary, but extremely useful to enable the men to keep the water in on board ship, as well as on marches, particularly over arid lands where a scarcity of water prevails, which has frequently happened to the Bombay troops. Towahs for baking bread are useless to Hindoos in the Bengal and Bombay Presidencies, as they do not cook; while the issue of beastie bags at Madras seems almost superfluous, if the regimental beasties are present with a canteen.

The beetlenut-cutters have hitherto been deemed unnecessary, as the men crack the beetlenut on the deck, or frequently have cutters themselves.

TABLE No. VIII.—Comparative Statement of the Proportion of Dead Stock shipped for Europeans and Native Troops proceeding on Foreign Service in Transports.

Names of Articles.	Bengal.	Madras.	Bombay.	
Lanthorn for 100 men	0	1	(A)	(A).—All these articles are shipped at the discretion of the Commissary-general, and in the proportion which the agent for transports may judge expedient on these occasions, so that the ships may not be lumbered with anything superfluous.
Candles for 100 men	0	1		
Pail buckets for 10 men	0	1		
Horse buckets for 20 men	0	1		
Cabooses, with sheet leads for 50 men	0	1		
Copper boilers with covers, and spoons for 25 men	0	1		
Scuttle butts for 100 men	0	1		
Copper scales with weights for 100 men.....	0	2 sets		
Deck scrapers for 5 men.....	0	1		
Brooms for 5 men.....	0	1		
Grinding stones for 50 men.....	0	1		
Swabs for 25 men	0	1		

I must differ, both as to the proportion in which it is supplied at Madras, as well as to the mode of distributing the articles to the men and to be taken care of by them: it can hardly be a question which is the best plan; for the quantity in the first place is too large, and will be found very much to encumber the ships, and it is out of reason to expect that the troops can take care of them when they land. The people of the transports are the proper persons to have charge of these articles, otherwise while the troops are on shore they would be neglected and lost for want of proper superintendence: I therefore prefer the Bombay plan, as most efficient and œconomical. The quantity of dead stock being calculated by the Commissary-general according to the length of the voyage, and in the proportion which the agent for transports may think sufficient, who might be deemed the most proper officer to judge what may be most useful in his own line, to prevent the transport being lumbered with anything superfluous:—for instance, a transport carrying three hundred men, would by the Madras calculation require six cabooses with sheet leads complete; a number sufficient at Bombay for three ships, as all ships have cabooses of their own. To accommodate such numbers must greatly inconvenience the shipping on these services, where too much room cannot be appropriated for the personal accommodation of the men and the working of the ship.

TABLE No. IX.—Comparative Statement of Rations, &c., issued to Horses proceeding on Foreign Service on Ship-board.

Names of Articles.	Bengal: per diem.	Madras: per diem.	Bombay: per diem.	
	lbs. oz.	lbs. oz.	lbs. oz.	(A).—This like all other dead stock for the voyage is shipped by the Commissariat, at the discretion of the Commissary-general in communication with agents for transports.
Hay or Straw....	10 $4\frac{1}{4}$	44 0	24 0	
Grain.....	6 $2\frac{8}{16}$	7 0	11 4	
Water ...Gallons	8	5	8	
Horse-buckets...	0	1	(A)	

Few cavalry have ever been shipped from Bombay for foreign service on transports for any length of

time, except a troop of horse artillery to the coast of Arabia in 1821, and then the horses were sent in open boats called buggalahs. I have however been upwards of thirty days on board a ship containing seventy-four horses, in very hot weather, in the Persian Gulf, where the distress occasioned by heat and a small quantity of water was very great; and from what Colonel Cunliffe mentioned of the heat between decks generally, an ample supply of water appears desirable. By His Majesty's orders also in the embarkation of horses, it is directed that they should not be over-fed during the voyage.

The Bengal ration, as embracing both these points, might therefore be preferred; for a pony would drink nearly five gallons of water on shore, and a horse must require more to relieve his thirst occasioned by frequent perspiration.

Statement exhibiting the Strength of the Honourable Company's Army on the Bombay Establishment from the year 1816 to 1829. Showing also the Expense incurred on account of Stores during the same Period.

Year.	Strength of the Company's Army.					Total.	Yearly Expense on account of Stores.	Total amount of 5 years.
	Cavalry.	Artillery.		Infantry including Invalids and Pioneers.				
	Native Cavalry.	European.	Lascars.	European.	Native Infantry.			
1816-17	229	857	1,446	1,036	22,556	26,124	3,64,709 3 20	
1817-18	783	884	1,394	1,119	24,613	28,793	8,24,721 0 89	
1818-19	946	865	1,417	1,042	27,751	32,021	11,54,151 1 31	
1819-20	924	954	1,040	886	27,287	31,091	7,38,816 0 63	
1820-21	1,375	907	870	775	28,153	32,080	5,65,969 2 17	
								36,48,368 0 20
1821-22	1,548	1,033	871	836	27,492	31,780	3,52,337 0 46	
1822-23	1,513	910	1,000	774	27,056	31,253	3,17,756 1 74	
1823-24	1,519	952	926	1,010	27,814	32,221	5,25,940 3 25	
1824-25	1,913	845	959	1,135	29,887	34,739	2,59,416 3 85	
1825-26	2,085	823	974	1,239	35,138	40,259	5,23,550 2 21	
								19,79,001 3 51
1826-27	2,181	917	978	1,301	34,074	39,451	5,23,550 2 21	
1827-28	2,145	1,084	1,114	1,091	36,109	41,543	5,73,837 2 13	
1828-29	2,230	1,089	1,115	1,259	33,775	39,468	7,45,867 1 60	
1829-30	2,157	992	1,158	1,339	32,358	38,004	6,51,872 3 31	
								24,95,128 1 25

Statement of the Number and Prices of Horses purchased during the last Four Seasons in the Market at Bombay, for Remount of the Madras Cavalry.

1823-24.....	80	Horses	purchased for	Rupees	39,635
1824-25.....	106	ditto	ditto	ditto	65,586
1825-26.....	432	ditto	ditto	ditto	2,17,696
1826-27.....	434	ditto	ditto	ditto	2,53,060
Total number of Horses	1052		Total Rupees....		5,75,977

General average price 547½ rupees nearly.

Statement relative to the Stud Establishment on the Bombay Presidency: established for the Improvement of the Breed of Horses.

Stallions.

Six or eight stallions are stationed in each collectorate, and all mares brought are covered by them gratis.

The produce is considered exclusively the property of the owner of the mare, and he is at liberty to dispose of it as he thinks proper.

Casualties amongst the stallions are supplied from superior horses sent to Government as presents from the Imaum of Muscat and other princes in the Gulf.

Four English stallions were sent out by the Honourable Court of Directors in May 1829.

A market has been opened at the head-quarters of each regiment of cavalry, where a committee passes and for any horses of which they approve, without the aid of any intermediate agency; so that the breeder receives the full value of his horse on the spot, and returns to his village without delay or expense.

The keep of 64 mares and 47 foals averages, during the last year, about 637 rupees per month.

On the subject of the prizes granted to the winners of cart races carrying a certain weight, we consider the plan well calculated to please the crowds which attend, and thereby afford a general inducement to Patels and Ryuls, &c. to visit the fairs with their families, which no doubt has a great effect in creating in their minds an interest and excitement which would in most cases lead to their individually entering into the object in view, viz. cattle-breeding; and on these grounds we should be sorry to recommend the premiums being abolished. But it by no means follows that the largest are the best bullocks, even on these occasions; the winners are generally cattle which, from being in good training as speedy travelling bullocks, are enabled to live longer at a quick pace, than animals capable of drawing much more, and therefore better for agricultural purposes than the smaller active description of cattle used in travelling.

On the whole, we consider the result of the show satisfactory, particularly as regards the horses.

It will be gratifying to Government to learn, that the number of horses at the late show was considerably greater than last year: but, what was of far more importance, the increase of a better description was particularly conspicuous. The concourse of people assembled was larger than in 1828, and the same interest displayed by them in the proceedings, as we had the gratification of noticing in our last Report. Indeed this part of the object in contemplation is now so far advanced as to ensure the accomplishment of the wish of Government, that in the course of a few years the appointed day will become a sort of fair in each district, affording the most substantial encouragement and convenience to all parties, if future measures are squared upon those which have been hitherto followed.

Present State of the Stud Establishment at Alligaum, 1st July, 1830.

Number of Mares in charge	64
—— of Foals	25
—— of Fillies	22
Total	111

Expenses of the Establishment for Improving the Breed of Horses.

40 Stallions averaging 16 rupees each per month	640
64 Mares and 47 Foals, averaging per month	637
Superintendent's salary and travelling charges	840
Office establishment	142
Rupees	2259

The keep of the stallions (with the exception of five stallions at Malligaum) is paid by the collectors in whose districts they are stationed.

Register of Additions and Alterations in the Establishments of the Bombay Presidency, from 1st November 1827 to 1st November 1830.

Things Ordered.—1827.	Annual Charge. More.	Less.
A quarter-master-serjeant allowed for the depôt for King's troops at Colabah.	168	
The battalion of Golundaze remodelled (Court's orders)	17,454	
Increase of salary to the Musselman Moonchee of the native medical school...	480	
An establishment allowed for the care of sick officers quarter	600 } [1]	
Increase of salary to brigade-major (Court's orders)	924 }	
Reduction of Allowances of certain Staff Officers: viz.		
Agent for gun-carriages	....	2,800
Paymaster, Poona division	....	2,400
1st member of the medical board	....	9,570
2nd ditto	....	9,570
3rd ditto	....	9,570
Superintending surgeon, Concan and South Guzerat	....	4,487
Ditto North-west division, Guzerat	....	4,487
Ditto Poona division	....	4,487
Ditto Malwa field force	....	4,487
Medical storekeeper	....	6,000 [2]
Inspector of hospitals, King's troops	....	12,380
Two assistant adjutants-general	3,696	
Two assistant quarter-masters-general	3,696	
	7,392	
Deduct additional batta (without house-rent) allowed to two of the above, not previously in receipt of it	990	6,402 [3]

[1] This is the amount of prospective increases in salaries: but as brigade-major of districts, if lieutenants, will not draw as formerly the allowances of captain, there will probably be a saving instead of an increase.

[2] Honourable Court's order, 2nd May 1827.

[3] Prospective as vacancies occur.

	Annual Charge.	
	More.	Less.
Regimental Tent Allowance struck off from certain Staff Officers, viz.		
Auditor-general	....	1,800
Deputy	....	900
1st Assistant	....	600
2nd ditto	....	600
Agent for clothing	....	900
for gun-carriages	....	900
for gunpowder	....	900
Barrack-master at Bombay	....	900
Commandant, depôt King's troops	....	600
Commissary of stores, grand arsenal	....	1,440
1st deputy	....	900
2nd ditto	....	900
Director of artillery, depôt of instruction	....	900
Fort-adjutant, Bombay	....	900
Surat	....	600
Ahmednuggur	....	600 [1]
Medical store-keeper	....	900
Deputy, Poona	....	600
Secretary to the military board	....	1,800
Assistant	....	900
Secretary to the medical board	....	900
Surgeons' general hospital	....	900
Assistant	....	600
Bombay garrison	....	900
Assistant	....	600
Tannah garrison	....	900
Surat ditto, and dry medical store-keeper	....	900
Assistant	....	600
Broach garrison assistant	....	600
Lunatic asylum	....	600
Town-major	....	1,440
Full batta allowed to the commissary-general and the military secretary to the commander-in-chief (Court's order)	4,900	
An allowance to the non-commissioned officer teaching the sword exercise at the Presidency	480 [2]	
Increase of allowance to Roman Catholic priests to attend soldiers at the Presidency	480	
A contract for three years executed for repairing the road from Panvell to Poona: Average yearly amount, rupees 16 3 20.		
A convalescent hospital established at Mahablishwar	15,000	
Additional establishment for the barrack department at Poona	84 [3]	
Increase of house-rent to the town-major, fort-adjutant and garrison-surgeon, Bombay	3600	
An officer appointed to superintend the repairs of buildings at Assurghur	1460	
A treasure-chest at Malligaum re-established	1320	
Establishment allowed to the inspector of the sword exercise at Poona	480 [4]	
Two officers appointed to assist the executive engineer, Baroda and N. D. Guzerat, in carrying on the repairs at Baroda and Hursole	2920	
An officer appointed to conduct a trigonometrical survey in the Deccan	14,266	
Increase of allowances to the medical storekeeper (Court's order)	1527	
Additional establishment for the church at Mhow	444 [5]	
Reduction of Commissariat Establishments in Malwa: viz.		
234 Dooley-bearers and 137 Brinjary bullocks	....	21,000
Increase of pay to Peons gunpowder manufactory	102	
A cooper allowed for the ordnance department, Baroda S. F.	360 [6]	
Allowance granted to officer in charge of the station at Mahablishwar for convalescent soldiers	1988	
Purchase of 4 draft bullocks bred in Candesh (authorized)	600	
Increase of pay-office rent allowance, Poona	600	
A horse and a pair of bullocks sanctioned for Kirkee	360	

[1] Struck off by the Honourable Court's order, May 2nd 1827. Regimental tent allowance increases with increase of rank. This calculation is made with reference to the rank of the officers holding stationary staff appointments at the time the orders striking off the allowance were issued.

[2] Since discontinued. The saving is shown in the statement of reductions.

[3] The whole establishment is not kept up throughout the year;—temporary, or during the fair season only.

[4] Since discontinued. [5] Since discontinued. [6] Since struck off.

	Annual Charge.	
	More.	Less.
Field allowances at Mhow struck off, being a saving in the allowances to Europeans of rupees 40,000, and to natives of 1,70,000	....	2,10,000[1]
Establishment allowed the committee compiling the supplementary sections to the regulations, discontinued	....	2,535
Full batta allowed to those officers at Poona learning the sword exercise who are absent from their corps	1,440[2]	
Lascars for the Ilanghar boats at Malligaum allowed	575	
Persons to administer oaths in the cantonment adawlut allowed to the superintendent of bazars at Poona	312	
An interpreter allowed to Guzerat provincial battalion	720[3]	
Addition to bazar and police department, Assurghur	2,016	
Thirty-six copies of the Quarterly Army List ordered[1]	432	
A commandant allowed for Assurghur on the pay of a 2nd class brigadier (Honourable Court's order)	6,240	
Allowance for four field Rowtie tents for the Poona bazar struck off	....	1,440
Stationary allowance on accounts of unfits at the Presidency	340[4]	
Addition to ordnance establishment, Surat and Kaira	240[5]	
Sundry details detached from the B. S. F. to take possession of certain districts belonging to the Guecowar placed under sequestration	48,000[6]	
A dooley for European veteran company at Tannah	336	
Additional office rent allowance to quartermaster-general	600[7]	
The regimental allowances of the Bombay army in the service of native princes struck off, viz. two captains of cavalry and four of infantry	....	9,304
An executive engineer appointed at Deesa	3,150	
An additional washerman for sappers and miners	120[8]	
Superintending surgeons granted travelling batta as surgeons on tours of inspection	1,000[9]	
A trumpet-major added to the establishment of the brigade of horse artillery	435	
Additional establishment for the church at Bhooj	408	
Additional establishment for the church at Poona	600	
The Lock hospital at Dapoolie abolished	....	1,500
House hired for a granary at Hursole	360	
Additional establishment in commissariat department, Poona	906[10]	
Extra allowance to cantonment surgeon, Matoonga	1,460[11]	
Full batta allowed native infantry details at Poona learning the sword exercise.	3,786[12]	
Additional office establishment for military board	3,240[13]	
Four pay Havildars in Southern Concan to assist in paying pensioners	240	
A dooley for 16th regiment native infantry at Baroda	420	
Allowance to artillery officer in charge of the ordnance department, Southern Concan, for Vingorla	1,200[14]	
Two Government plates to be annually run for by horses bred in Western India	2,400[15]	
Allowance to officer selected for command of troops occupying Guicowars sequestered district	3,000[16]	
Allowance to officer appointed to command the troops occupying sequestered district north of Baroda	3,000[17]	
Salary to an officer specially appointed to assist in purchasing horses for European corps	....[18]	
An establishment for soldiers' library at Poona	84	
Additional office establishment to quartermaster-general	780[19]	
The appointment of a line serjeant at Deesa sanctioned	252	
Assistant to drill instructions in the sword exercise	300[20]	
Establishment of Puckaulies with His Majesty's 4th light dragoons reduced, 18 bullocks with drivers being discharged	....	2,592
A barrack-serjeant appointed to Nilgherry Hills	240	
A line serjeant appointed at Bhooj	252	
New organization of Hill Fort, native commands	9,468	
Two staff-officers appointed to proceed on special duty to Calcutta, and two officers to act in their room, all drawing full staff allowance (order by the Supreme Government)	....[21]	

[1] The strength of the force was—1 troop horse artillery, 1 company foot ditto, 1 regiment native cavalry, 4 ditto native infantry, pioneers and department.
[2] Since discontinued. [3] A civil charge. [4] This amount is liable to fluctuation. [5] Since discharged.
[6] Temporary; this sum is the estimated amount of field allowances and extra establishment.
[7] Since struck off. [8] Struck off. [9] Probable amount. [10] Since reduced.
[11] Since discontinued. [12] *Ibid.* [13] Since struck off. [14] Since discontinued. [15] *Ibid.*
[16] Temporary. [17] *Ibid.* [18] Rupees 500 per month, temporary, confined to a period of six months.
[19] Since reduced. [20] Since discontinued.
[21] Temporary, since discontinued; expense, rupees 29,534 *per annum*.

	Annual Charge. More.	Annual Charge. Less.
The light battalions at Poona broke up	....	6,744[1]
Instruction of infantry details in the sword exercise discontinued	....	8,046[2]
The establishment of each regiment of native cavalry from 70 to 50 troopers, each troop	....	2,55,000[3]
The establishment of the regiments and battalions of Native Infantry, viz.: Fourth regiment of the line B. S. F. 106 privates each company. Twenty-second ditto . } First Marine Battalion } 86 ditto ditto. Second extra Battalion 80 ditto ditto.		
Reduced to 70 privates per company	....	545,000[4]
1829—A special committee at Poona appointed to, of whom are staff-officers whose appointments are temporarily held by others	....[5]	
Addition to the office establishment of the deputy inspector of His Majesty's hospital	1,044[6]	
His Majesty's 40th regiment admitted on the establishment (orders from home)	300,000	
Received establishment of cattle for Poona division	30,000	
The cavalry equitation drill discontinued	....	7,404
A captain appointed acting inspecting engineer during the employment of a major on other duty	....[7]	
Additional establishment for regimental native schools	3,264	
New scale of allowance fixed for brigadiers (Court's orders)	22,560	
Occupation of Sholapore by Bombay troops (by order of the Supreme Government)	41,725	
Evacuation of Mhow by the Bombay troops	....	300,000[8]
The rented commissariat store-room at Surat given up	....	720
A contract entered into for forage for camels at Poona	....	12,000[9]
Additional salary to the commanding officer, pay-master, and deputy commissary of stores appointed to Sholapore, to place them on the same footing as they stood at Mhow	....[10]	
The station of Poona made a bridge command of the 1st class, to complete the number allotted for this Presidency	3,240	
A medical officer appointed to the charge of the convalescent station on the Nilgherry Hills	4,200	
Allowance to the officer in charge of the public buildings, &c., &c. at the convalescent station on the Mahableshwar Hills	1,200	
Allowance for the horse and for stationery to the chaplain at Kirkee	480	
A quartermaster-serjeant and two laboratory men in Guzerat	....[11]	
Beggaries attached to the pioneers at Poona	....[12]	
Additional stationary allowance to the officer commanding the depôt of His Majesty's troops	360	
Two additional Packaulies for pioneers at Lulling Pass	....[13]	
Four Packaulies for artillery at Matoonga	....	
New scale of allowance fixed for medical officers regimentally employed, and those formerly drawn for the supply of medicines, &c. discontinued by order of the Honourable Court to the Supreme Government, 28th May 1828	....	60,000
Writers allowed to the medical board for copying their proceedings annually for transmission to the Honourable Court of Directors	400	
An establishment of the Peons allowed to the European corps at Bombay and Belgaum, for the purpose of taking up diseased women	1,368	
Allowance granted to two serjeants appointed to the care of sick officers' quarters at the Presidency	336[14]	
Two hospital serjeants allowed for the convalescent hospital at Mahableshwar	240	

[1] Being command allowance 4,800; adjutant staff allowance, rupees 1,944.

[2] Officers instructing, rupees 3,480; drill native cavalry officers 780; batta to details 3,786.

[3] Six hundred troopers' pay, clothing, &c. rupees 93,000; 600 horse maintenance, saddles, &c. 1,62,000. This reduction was prospective as casualties occurred.

[4] Pay, clothing, &c. for 5,320 privates. This reduction was prospective as casualties occurred.

[5] Temporary, since discontinued; expense, rupees 19,830 *per annum*.

[6] Since discontinued.

[7] Temporary (this is the difference between the garrison allowances of captain and field allowances of major), since discontinued; expense, rupees 4,248.

[8] Staff and staffs establishments, 100,000 public cattle followers, and extraordinaries 200,000.

[9] This saving is calculated for 184 camels at rupees 5–2 74 each.

[10] Temporary, allowed only to the officers lately appointed; annual charge, rupees 9,720.

[11] Temporary, during the artillery practice in the province; annual charge, rupees 408.

[12] Allowed for three months, rupees 600 per month.

[13] Allowed till the setting in of the monsoon, rupees 110 per month.

[14] Since struck off.

	Annual Charge.	
	More.	Less.
Lieutenant-colonel Sullivan, while in command of Bombay garrison, permitted as a special case to draw the allowance of a brigadier of the 1st class	....[1]	
Bazar establishment allowed for Mahableshwar	456	
Allowance granted to senior surgeon at Poona attending the staff and details	1,200	
The situation of troops quarter-master of horse artillery abolished	....	7,893[2]
Reduction in the pay of 27 horse-keepers attached to the breeding mares	....	1,584
A Subadar-major allowed to each of the two extra battalions	600[3]	
A farrier-major allowed to the head-quarters of the horse artillery brigade	252	
Stationery allowance to the barrack-master serjeant, Nilgherry Hills; allowance to the chaplain at Deesa for going to Hursole to perform divine worship	3,000	
Sub-assistant surveyors and builders allowed house rent	1,000	
A line serjeant allowed to the brigade in Candesh	252	
Additional establishment for Asseerghur Fort	126	
A dooley attached to the garrison guards at Bombay	576	
A second major added to the establishment of the engineers (Honourable Court's order)	7,687	
Reduction in the army, as ordered by the Honourable Court of Directors of 2nd troops or 2 companies, with 3 subaltern officers in regiment of native cavalry and native infantry, and of the same number of subaltern officers in the European corps	....	680,000
Office rent discontinued for certain offices removed into old secretary office	....	17,460
Hospital establishments for detached companies of pioneers	2,000	
Increase of pay to certain native hospital servants	864	
Allowance to a Roman Catholic Priest at Deesa	360	
A line serjeant for the station of Sholapore	252	
An establishment of Cassids for ditto	252	
Increase of pay to 8 sub-assistant surveyors and builders	1,440	
A superintending surgeon at the Presidency appointed till further orders	10,513[4]	
A pundit allowed for each battalion of artillery	360	
Additional office establishment and stationery allowance in the commissariat department, in consequence of the increased duties of hospital supplies	5,000[5]	
Permanent establishment for the convalescent hospital at Mahableshwar	144	
Allowance for children of soldiers in the central school extended to those of conductors, and the allowance continued to all children in that school till the age of 15	672	
Office establishment fixed for the deputy pay-master at Sholapore	3,852	
Office establishment fixed for the executive engineer at Deesa	3,876	
Increase to the office establishment of ditto in the N. D. Guzerat, in consequence of the new station of Hursole	1,728[6]	
An ordnance assistant to the commandant of artillery appointed and allowances fixed	3,443	
A brigade-major of artillery for the Poona division appointed	5,163	
Allowance for office establishment to the acting executive engineer at Sholapore	600[7]	
Annual allowance to the Cutwal of the Poona bazar for celebrating the Mahamem	300	
Establishment for the officer stationed on the Mahableshwar Hills	1,116	
Increase of salary to Mr. Sundt of the deputy surveyor-general's office	600	
Additional salary and office establishment to the judge advocate-general, appointed judge advocate-general of the army and marine	....[8]	
Palanqeen allowances granted to the chaplain at Belgaum	504	
Office of inspector of Hill Forts in the Deccan abolished	....	6,284
A 2nd class bazar establishment allowed at Ahmednuggur	1,262	
Establishment fixed for the church at Deesa	636	
Additional establishment allowed to the church at Dapoolie	582	
A barrack serjeant allowed at Deesa	168	
Office establishments of the inspecting engineers revised	....	5,688
Salary fixed for the secretary to the general prize committee	2,100	
A pundit and school-room allowed for the Nalvah Battro	240	
The brigadier-generals commanding the Presidency and Surat division of the army, each allowed an aide-de-camp	5,235	
Salary of assistant adjutant-general and assistant and deputy assistant quarter-master increased to correspond with the Madras rates	5,736	

[1] Temporary; rupees 3,240 *per annum*.

[2] This is the prospective saving by the reduction, as casualties occur, of the situation of four troop quarter-masters.

[3] Corps since disbanded.

[4] Supposed to be temporary until a vacancy occurs to bring superintending surgeon fresh arrived from Europe on the regular medical staff.

[5] Since reduced.

[6] Since discontinued.

[7] Since discontinued.

[8] A marine charge, rupees 4,968 *per annum*.

	Annual Charge.	
	More.	Less.
Hospital orderly allowed to each regimental hospital	2,040	
The garrison surgeons of Bombay, Tannah, and Surat, allowed superior batta agreeably to the regulations	4,927	
Increase of salary to the members of the medical board (by order of the Honourable Court)	10,998	
Ditto ditto to superintendent surgeon ditto	2,400	
Ditto ditto to inspected of His Majesty's hospital ditto	4,212	
Reduction in the establishment of the brigade of horse artillery of 88 gunners, and 15th January 1830, 240 horses	....	98,000
The establishment of 25 horses and 101 mules, employed with the foot artillery at Poona and Baroda, broke up and cattle sold	....	40,000
Ten elephants, late attached to the Bombay troops in Malwa, transferred to the Bengal establishment	....	8,000
The two regiments of European infantry of 8 companies each, reduced to 5 companies each, (Honourable Court's order 13th May, 1829)	....	128,000
The salary allowed on the 10th October 1828 to the officers temporarily appointed to assist in the purchase of horses, prolonged	.... [1]	
A body of cooleys to be employed under the collector in constructing the roads between Dharwar and Belgaum	.... [2]	
Six dooley-bearers allowed for the regiment N. I. at Asseerghur	504	
The surveys on the Deccan and Southern Concan, under Captains Graflons and Jervis, discontinued from 31st May 1830	....	38,000
The battalion of native invalid reorganized	....	8,352
Reduction on the proportion of blank ammunition for annual practice. The amount of saving as reported by the commander-in-chief is estimated at	....	27,000
Reduction in the establishment of the foot artillery Lascar, and of the depôt of instructions on the expense of artillery practice; also by the discharge of the draft cattle at the Presidency, and by their measures attending the removal of the 1st battalion from Bombay to Ahmednuggur, computed as per accompaniments to Mr. Secretary Williamson's letter *a*.	....	41,044
Two dooleys allowed for 1st light cavalry at Sholapore	600	
Brigade-majors of divisions designated deputy assistant adjutant-general	624	
Establishment for the Presidency garrison hospital fixed	450	
A dooley allowed to the sappers and miners during the fair season	.... [3]	
Eight carts attached to the pioneers employed on the Dharwar road	.... [4]	
A tuttoo allowed to the aqueduct serjeant at Poona	180	
Field establishment of puckalies allowed to the native corps at Poona	.... [5]	
The pay of the boat Lascar attached to the Flying bridge reduced	....	744
Allowance to the deputy assistant quartermaster-general at Sholapore for the charge of tents	360	
Increase to the establishment of boys with native corps, and an increase of pay to a portion of them, as well as to a specific number of the privates in each corps	30,000	
A sexton allowed for church at Ahmednuggur	120	
Two additional draftsmen in the office of the quartermaster-general	.... [6]	
An establishment of Halalkhores for the native regiments at Poona	612	
Additional bhesties and watermen for the wing of the regiment at Deesa	.... [7]	
Nine students from the engineer institution transferred to the establishments of executive engineers	3,240	
The two extra battalions disbanded	....	200,000 [8]
The office of brigade-major of artillery made distinct from that of ordnance assistant to the commandant, and a separate officer appointed thereto	3,507	
Officers of European corps placed on half tent allowance	....	70,000 [9]
The two European regiments of five companies, each formed into one regiment of eight companies	....	1,12,000 [10]
A tindal at the Taka ferry discharged	....	180
Functions of the military board suspended, the secretaryship and assistant se-		

[1] The estimated amount of the further outlay non-sanctioned is rupees 5,000 per 10 months, from February to December. [2] Temporary; computed annual expense, rupees 72,000.

[3] Temporary, since discontinued; annual expense 320 rupees.

[4] Temporary; annual expense 1,920 rupees. [5] Temporary; 315 rupees per month.

[6] Allowed for six months, total 720 rupees. [7] Temporary; monthly expense 191 rupees.

[8] This annual saving will not be entirely effected until after the men transferred and borne as supernumeraries on the of other corps shall have become effective.

[9] Lieutenant-colonel, major, captain, lieutenant and ensign 8—6—39—93—45 more.

[10] Effective reduced, non-effective reduced, non-commissioned reduced, serjeant, corporal, doo. prov. com. offic. adjutant, quartermaster, sta[ff] non follow. and sup. cost 18—30—14—360—1—1—1—14—2.

	Annual Charge.	
	More.	Less.
cretaryship discontinued, and the office of accountant and auditor of military store accounts created	....	8,868
Establishment of a treasure tumbril at Mahableshwar during the fair season	896	
A hospital serjeant to European general hospital at the Presidency	120	
Establishment fixed for the executive engineer at Sholapore	2,340 [1]	
A sweeper allowed for the cantonments gaol at Poona	60	
Reductions in the office establishments of the commissariat at Poona, Surat, Baroda and Bhooj	....	5,676
Reductions in the rates of pay of dooley-bearers, camel-drivers, and other commissariat followers	....	10,404
The workmen employed on the roads at Hursole discharged	....	2280
The establishment of artificers with the foot artillery revised	....	384
Extra followers for European details attached to the Queen's Royals	.... [2]	
Scale of office rent for assistant commissary-general revised	300	
Allowance granted to the district chaplain of Belgaum for visiting Dharwar and Kulludghee	4,800	
Expense of the Flying bridge over the Moola river at Poona discontinued	....	936
Batta to Sukleghurs of horse artillery reduced	....	84
Pay of tent and store Lascars reduced, and batta to the latter at field stations struck off	....	15,000
The daily grain ration of the mules in Cutch reduced from $7\frac{1}{2}$ to 5 pounds	....	765
Two hurkaras of the Cutch force discharged	....	480
Ninety Bringaree bullocks ditto ditto	....	2,700
Additional washermen and puckaulie for foot artillery at the Presidency	425	
Horse allowance granted to the ordnance assistant to the commandant of artillery	360	
Transfer to Baroda of the Roman Catholic priest, formerly maintained by the Bombay Government at Mhow	600 [3]	
A Lock hospital established at Ahmednuggur	1,500	
Extra office establishment allowed to the auditor and accountant of military store accounts	.... [4]	
A barrack serjeant allowed for the station at Ahmednuggur	304	
Increase of office establishment for the assistant adjutant-general southern division of the army	600	
The allowance for contingencies for bazars of the 2nd class reduced from 30 to 28 rupees	....	1,200
Rates of clothing stoppages equalized with those of Bengal	....	27,000 [5]
The commissariat establishment at the timber depôt and remount stables discharged	....	1,116
Reduction of the commissariat office establishment at the Presidency, Surat, Rajcote, Deesa, and Cutch	....	10,180
Surgeons and assistant-surgeons of foot artillery allowed, by order of the Hon. Court of Directors, the pay of captains and one lieutenant of artillery	990	
The commissariat duties at Vingorla placed under a commissariat officer	720	
A pay tindale allowed to each company of tent Lascars	360	
The pay of the boatmen of the Flying bridge on the Kim river reduced	....	110
The two serjeants appointed to take care of the sick officers' quarters at the Presidency returned to their corps, and staff allowances struck off	....	336
Reduction in the commissariat establishment in Kutch, viz. 16 camels and 25 dooley-bearers	....	4,500
The regimental bazar establishments of the artillery and engineer corps at Ahmednuggur discontinued	....	1,152
Reduction in the commissariat establishment at Rajcote, viz. 250 draft, pack, and brinjary bullocks, and 60 dooley-bearers	....	13,678
The situation of overseer in the camp equipage department abolished	....	480
Reductions ordered at Broach, in consequence of its no longer being maintained as a garrison	....	13,000
The troops at Kulludgee (a wing of native cavalry and regiment native infantry) continued on field allowance till further orders	.... [6]	
An establishment allowed for the church at Ahmednuggur	888	
A farrier allowed for the horses of the commander-in-chief	252 [7]	

[1] Since discontinued.

[2] Temporary; expense 69 rupees per month.

[3] The pay of the persons having been included in the saving effected by the transfer of Mhow to the Bengal Presidency, it becomes necessary to exhibit it here as an increase of expense.

[4] Temporary, being limited to a period of six months, at 415 rupees per month.

[5] By order of the Honourable Court, 4th June 1828.

[6] Temporary; expense about 40,000 rupees *per annum*.

[7] No additional expense will be incurred at present, the situation being filled by one of the supernumerary farriers, with the native cavalry.

	Annual Charge.	
	More.	Less.
Allowance to the officers appointed to superintend buildings of the travellers' bungalows on the Belgaum roads	....[1]	
Allowance fixed for the adjutant and quarter-masters of artillery in Guzerat, which appointment was sanctioned on the 5th of March	2,794	
Allowance granted to the surgeons in medical charge of the staff and engineer institution at Ahmednuggur	1,200	
Charge of the staff at Deesa	360	
A civil surgeon at Sholapore to have medical charge of the staff and military details, and to draw his military allowance and palanqeen allowance	....[2]	
Ditto at the Residencies at Sattara and Bhooj ditto	....[3]	
Ditto, and to draw their military allowances	....	....[4]
The Lock hospital at Sattara abolished	....	1,500
The situation of brigade-major in Cutch abolished, and that of line-adjutant substituted	....	1,068
Various public offices ordered to remove into the new Town Hall when ready for their reception, causing a saving in the office rent of	....	13,200
Regimental allowances struck off from His Majesty's officers on the staff not borne on the establishment of regiment in India	....	10,437[5]
Reduction in the number and pay of the artificers of the ordnance department in Cutch	....	5,926
Ditto in the establishment of the bazar department	....	1,764
Ditto in the establishment of ordnance mules in ditto	....	3,162[6]
The situation of the commanding officer of the escort in Kutch abolished	....	1,095
The grain ration for the horse artillery and cavalry horses reduced	....	45,000
An establishment allowed for the church at Belgaum	732	
A portion of the establishment employed in the late survey in the Deccan retained for the purpose of being employed on a survey in Candesh	5,800	
Batta struck off at the frontier stations of Deesa and Bhooj from all classes of persons except European officers	....	180,000
The Government allowance for Turf Plates to be run for by country horses in Guzerat and the Deccan struck off	....	2,400
Reduction in the equipment of the ordnance mules at Bhooj, and of the allowance for keeping up the same, viz. 18 saddles and 18 sets of harness in Cutch	....	1,356
Further reduction in the number and pay of the ordnance artificers ditto	....	1,224
Ditto ditto in the pay of commissariat followers ditto	....	552
Ditto ditto in the bazar establishment ditto	....	1,764
Ditto the field tentage of the general officers commanding the Poona division of the army	....	7,200[7]
The situation of the executive engineer at eight stations abolished	....	55,536
Extra Neet hospital servants at Surat and Broach	....[8]	
A peon allowed to take care of the burial-ground at Matoonga	72	
The appointment of native adjutant to a detached wing of native cavalry abolished	....	210
The battalion of native invalids broke up and men pensioned	....	70,000[9]
A writer and stationery allowed for the barrack department at Baroda on the transfer of the duties from the commissariat to the ordnance department	480	
Two pairs of bullocks allowed at Deesa for drawing water for the European regiment	408	
Two puckalies allowed to the foot artillery in Kutch	216	
Allowance granted to a Roman Catholic priest at Belgaum	540	
A treasure chest allowed at Sholapore	....[10]	
An immediate reduction of 15 per cent., and a further prospective reduction of 5 per cent., directed to be made in the amount of office establishment, causes a saving which is estimated at	....	60,000[11]
Medical officers granted an allowance of 12½ rupees per 100 men per month for corps and details extra to their field medical charge	6,000	
A naique and 9 Ramoosees allowed for the station Ahmednuggur	636	

[1] Temporary; 4 rupees *per diem*.

[2] The increase in the military department will be for a surgeon 3,347 rupees; for an assistant-surgeon 2,098; but there is a reduction in the civil allowance of 1,800 rupees *per annum*.

[3] Increase in the military department 1,738 rupees.

[4] Decrease in civil ditto 2,098 rupees.

[5] Honourable Court's order, 9th Sept. 1829, published by Supreme Government 26th March 1830.

[6] Reduced from 68 to 50.

[7] Honourable Court's order, 19th August 1829.

[8] Temporary; 110 rupees per month.

[9] This sum includes the difference between the pay and pensions, the latter being estimated to average about one-fourth less than the former.

[10] Temporary; sanctioned 110 rupees per month.

[11] It is not possible at present to estimate the amount of this increase correctly; the calculation is made for 4,000 men, as being a probable number for whom the allowance may be drawn.

	Annual Charge. More.	Less.
The late executive engineers, whose situations were abolished by Government orders 16th June last, appointed assistants to the inspecting engineers of divisions	14,400	
The difference between the pay of assistant and executive engineers allowed to six of the above officers	....[1]	
The situation of chief guide abolished	....	744
The command of Tannah garrison notified to have been abolished	....	4,920
The pioneer corps reduced from eight to six companies	....	20,000
The officer inspecting engineer at the Presidency, abolished	....	14,833
Reduction of allowance to the two officers attached to the Poona auxiliary horse	....	7,200
Ditto in the establishment of artificers with the horse artillery	....	3,672
Ordnance department re-organized. Arsenal store Lascars reduced in number and pay		30,000
Ordnance department re-organized. Reduction in the number of artificers		24,000
Corps of tent Lascars ditto reduced in the number and pay	....	14,000
Increase of establishment to Poona paymaster	....[2]	
The situation of brigade to the King's troops at Poona abolished		3,423
In pursuance of Instruction from the Supreme Government, The whole of the troops in Guzerat placed under the command of the general officer as commanding the native division, and certain staff allowances reduced, viz. Baroda reduced from a first to a second class command	....	3,240
In pursuance of Instruction from the Supreme Government, The whole of the troops in Guzerat placed under the command of the general officer as commanding the native division, and certain staff allowances reduced, viz. One paymastership abolished	....	6,000
In pursuance of Instruction from the Supreme Government, The whole of the troops in Guzerat placed under the command of the general officer as commanding the native division, and certain staff allowances reduced, viz. Provisional brigade majorship abolished	....	6,543
One moochee and one blacksmith in each troop of native cavalry struck off	....	4,536
Total Rupees	7,67,500	37,67,498

By Order of the Honourable Court,
15th Dec. 1829.

Statement showing the Cost of Grain to 9,738 Horses at Bengal and Bombay, compared with the same number in Europe.

	£.	s.	d.
Total cost of grain for 9,738 horses at 10lbs. for six months, and 8lbs. for the other six, *per diem* per horse, is for one year in Bengal rupees 4,54,644, or at two shillings the rupee	45,464	2	0
Total cost of grain for 9,738 horses at 10lbs. for eight months, and 8lbs. for the other four, *per diem* per horse, is for one year in Bombay rupees 4,91,995, or at two shillings the rupee	49,199	2	6
Total cost of oats for 9,738 horses for one year, allowing a peck of 10lbs. *per diem* per horse, at 21 shillings per quarter, is	1,16,667	0	0

	Europe. £.	s.	d.	Bengal. £.	s.	d.	Bombay. £.	s.	d.
Or per horse *per annum*	11	19	11½	4	13	4½	5	1	0½

This shows that the keep of a horse in Europe in grain alone is more than twice as dear as at either Bengal or Bombay.

It is however to be observed, that the amount of establishment in Bengal was	52,782 rupees.	Or about	£5,278	1	0
And in Bombay	3,876 rupees.	Or about	387	3	0

Statement of the Number and Prices of Horses purchased during four years on the Bombay establishment for the Cavalry.

1823–4	394	horses purchased	1,64,361
1824–5	737	ditto	3,09,696
1825–6	959	ditto	3,89,621
1826–7	133	ditto	61,861
Total number of Horses	2,223	Total rupees	9,25,539

General average price, 417 rupees each Horse.

[1] Temporary; 290 rupees per month.

[2] Temporary; 140 rupees per month.

Statement of Gun-carriage Department for the Year 1827–28.

Issues.

Names of Articles.	Quantity.	Rate.	Amount.	Total.
1827.		*r. a. p.*	*r. a. p.*	
May. Adzes, coopers', iron	50	1 3 26 each	90 3 0	
Hinges, chest, brass, iron	50	1 1 55 pair	69 1 50	
				160 0 50
June. Iron pigs, grey (pigs 739 and 54 pices) ..... cwt.	398 18	3 3 51 cwt.	1,543 3 47	
				1,543 3 47
July. Tin sheets	50	2 1 25 cargo	5 3 12	
Iron sheets $\frac{1}{8}$ inch 42 .... cwt.	19 3 15	13 0 86 cwt.	396 1 32	
——— thin ditto 40	10 0 12			
				402 0 44
Aug. Iron, flat, 6 . 1 inch bars 32 cwt.	40 1 17			
——— 5 . 1 ditto 39 ditto	41 2 5			
——— $4\frac{1}{2}$. 1 ditto 18 ditto	20 1 3			
——— 4 . 1 ditto 10 ditto	10 3 16			
——— 4 . $\frac{3}{4}$ ditto 19 ditto	19 1 25			
——— $3\frac{1}{2}$. $\frac{3}{4}$ ditto 40 ditto	54 2 10			
——— 3 . $\frac{5}{8}$ ditto 149 ditto	99 1 12			
——— $2\frac{1}{2}$. $\frac{5}{8}$ ditto 89 ditto	59 2 27			
——— 2 . $\frac{1}{2}$ ditto 135 ditto	60 0 10			
——— 1 . $\frac{1}{2}$ ditto 45 ditto	9 1 3			
Iron, bolt 1 ditto 33 ditto	10 0 15	29 19 3 19 — 9 0 83 cwt.	5,523 3 04	
——— $\frac{3}{4}$ ditto 50 ditto	9 2 27			
Iron, square $3\frac{1}{2}$ ditto 8 ditto	22 2 4			
——— 2 ditto 10 ditto	10 1 21			
——— $1\frac{1}{2}$ ditto 38 ditto	30 2 8			
——— $1\frac{1}{4}$ ditto 33 ditto	20 0 0			
Iron hoops 2 . $\frac{1}{4}$ do. bundles 9 do.	9 3 14			
——— $1\frac{1}{2}$. $\frac{1}{4}$ ditto 10 do.	9 3 25			
——— $1\frac{1}{2}$. $\frac{1}{4}$ ditto 9 do.	9 3 3			
——— 1 . $\frac{1}{4}$ ditto 10 do.	10 2 14			
Iron rod $\frac{1}{2}$ ditto 20 do.	20 2 11			
——— $\frac{3}{8}$ ditto 20 do.	20 0 1			
Axletrees, iron, with brass boxes 6 pounder	70	103 2 07 each	7,246 0 90	
———, with one brass boxes 6 ditto	1	103 2 07	103 2 07	
———without ditto, 6do.	9	103 2 07	931 2 63	
Trucks, cast iron, for 6 pounder garrison carriages, N. P.	22	23 1 29	513 0 38	
				14,318 1 02
Sept. Files, flat, Europe, 16 inches doz.	16	27 2 04 doz.	36 2 72	
——— 12 ditto ditto	16	22 2 80	30 1 06	
——— 14 ditto ditto	10	22 2 80	18 3 66	
——— 10 ditto ditto	8	22 2 80	15 0 53	
——— 8 ditto ditto	5	22 2 80	9 1 83	
———smooth, 18 do. do.	8	1 0 39 each	8 3 12	
——— 14 do. do.	8	1 0 39	8 3 12	
Files, half round, Europe, 16 do. do.	16	27 2 04 doz.	36 2 72	
——— 14 do. do.	10	22 2 80	18 3 66	
——— 12 do. do.	16	22 2 80	30 1 06	
——— 8 do. do.	5	22 2 80	9 1 83	
———smooth, 18 do. do.	8	1 0 39 each	8 3 12	
——— 12 do. do.	8	1 0 39	8 3 12	
Iron work, Europe, for limbers and boxes for light howitzer $5\frac{1}{4}$ inch, weighing 7,323 . . sets	6	38 0 53 cwt.	308 1 43	
——— for travelling 18-pounders, weighing 28 3 . . sets	15	27 0 53 cwt.	780 0 23	
Spades, country, complete	6	3 1 0 each	19 2 0	
Trucks, cast iron .....pair	1	23 1 29 each	23 1 29	
Sockets for rockets, 32 pounders	54	1 1 61	75 2 94	
———, 24 ditto..	54	1 1 61	75 2 94	
———, 18 ditto..	52	1 1 61	72 3 72	
				1,591 2 10
Oct. Brushes, hand	24	9 2 45 doz.	19 0 90	
Cutters portfires 6 and 3 pounder	50	1 0 40 each	55 0 0	
Drivers, coopers' brass.....	100	1 1 0	125 0 0	

Statement of Gun-carriage Department for the Year 1827–28.

Receipts.

Names of Articles.	Quantity.	Rate.	Amount.	Total.
1827.				
May. Barrels, powder, empty, 50 lbs. with four copper hoops each .	117	*r. a. p.* 10 0 54 each	*r. a. p.* 1,185 3 18	
Boxes, ammunition, musket....	75	3 2 50 do.	271 3 50	
Chests, laboratory, empty	2	55 3 52 do.	111 3 4	
Choakes, fascine	10	9 2 40 do.	96 0 0	
Coins, mortar, wooden, 10 inch.	6	22 0 64 do.	132 3 84	
———————, 8 inch.	4	20 0 80 do.	80 3 20	
Doolies, hospital	24	25 2 72 do.	616 1 28	
Fids, wooden, for traces	100	0 2 66 do.	66 2 0	
Forks, sap	16	8 1 33 do.	133 1 28	
Gins, tied	3	277 1 50 do.	832 0 50	
Helves for hoes	927	0 3 0 do.	695 1 0	
——— for pickaxes	868	0 3 0 do.	651 0 0	
Horses' magazine, wooden	100	16 3 40 do.	1,685 0 0	
Mallets, fascine	10	0 3 90 do.	9 3 0	
Moulds, bullet, brass, king's pistol	5	22 3 33 do.	114 0 65	
Platform, gun, traversing.....	1	331 1 39 do.	331 1 39	
Platforms, mortar.....	2	298 1 90 do.	596 3 80	
Traps, rat, wooden	6	5 1 77 do.	32 2 62	
				7,643 2 28
June. Aprons, wooden, 32 pounder ..	14	2 3 45 do.	40 0 30	
———————, 24 ditto	17	2 3 45 do.	48 2 65	
———————, 18 ditto	47	2 3 45 do.	134 2 15	
———————, 12 ditto	10	2 2 31 do.	25 3 10	
Barrels, powder, empty, 50 lbs. with 4 copper hoops each....	90	10 0 54 do.	912 060	
Beds, cheek, howitzer, heavy, with wooden coins, complete, 5¼ inch coins.....	5	233 2 14 do.	1,167 2 70	
Boxes, ammunition, musket....	252	3 2 50 do.	913 2 0	
Carriages, ammunition, body, with limbers and iron-naved wheels, complete, 12 pounder	4	1,720 0 0 do.	6,880 0 0	
———————, ditto, ditto, 9 pounder	4	1,640 0 0 do.	6,560 0 0	
———————, ditto, ditto, 12 ditto	1	1,583 2 40 do.	1,583 2 40	
———————, block, howitzer, light, with limbers and iron-naved wheels, complete, 5¼ inch....	2	1,495 2 86 do.	2,991 1 72	
———————, cheeks, howitzer, iron, with limbers and iron-naved wheels, complete, 5¼ in., for trial	1	1,773 2 66 do.	1,773 2 66	
Carts, platform, with iron-naved wheels, complete	12	587 3 67 do.	7,055 0 4	
Chest, laboratory, new pattern..	4	55 3 52 do.	223 1 8	
Choakes, wooden, magazine....	450	0 1 67 do.	187 3 50	
Doolies, hospital	20	25 2 72 do.	513 2 40	
Fids, wooden	300	0 2 66 do.	199 2 0	
Furnace or grate, iron, for heating shot	1	364 1 33 do.	364 1 33	
Gin, field	1	330 1 67 do.	330 1 67	
Helves for pickaxes	105	0 3 0 do.	78 3 0	
Horses, wooden, magazine	75	16 3 40 do.	1,263 3 0	
Jack, iron, for making spun yarn	1	61 0 66 do.	61 0 66	
Mould, portfire, brass	1	87 2 43 do.	87 2 43	
Platform, mortar	1	298 1 90 do.	298 1 90	
———, traversing	1	331 1 39 do.	331 1 39	
Port, wooden, with a large staple and ring, iron, for castle flagstaff	1	46 1 33 do.	46 1 33	
Skids, cast iron, for supporting guns	2	52 2 33 do.	do. 105 0 66	
Trestles, fascine	15	9 1 33 do.	139 3 95	
Wedges, mason, iron, with steel point, each 12 inches long ..	23	1 2 33 do.	36 1 59	
				34,354 0 21

Statement of Gun-carriage Department for the Year 1827–28.—*Continued.*

Issues.

Names of Articles.	Quantity.	Rate.	Amount.	Total.
1827.		*r. a. p.*	*r. a. p.*	
Oct. Handspikes, trail	50	1 2 75 each	84 1 50	
Harps and staples, brass	100	0 1 12 do.	28 0 0	
Nails, brad ..... ewt.	10 0 0	0 1 87 lbs.	523 2 40	
——, clout .....ditto	8 0 0	7 0 62 mdl.	228 3 84	
——, clasp .....ditto	20 0 0	18 3 89 ewt.	379 1 80	
——, rose-headed .....ditto	12 0 0	22 2 87 do.	272 2 44	
Planes, toping, coopers'	24	0 1 88 each	11 1 12	
Rivets, iron ..... ewt.	2 0 0	25 1 28 ewt.	50 2 56	
Rules, two feet	24	1 3 31 each	43 3 44	
Saws, cross cut	24	11 1 79 do.	274 2 96	
——, setters	20	4 3 0 do.	95 0 0	
——, whip	50	6 0 96 do.	312 0 0	
Screws, iron, of sorts.....gross	200	2 2 0 gross	500 0 0	
Shovels	12	6 0 0 each	72 0 0	
Sieves, brass-wire, of sorts	4	7 0 0 do.	28 0 0	
——, iron, ditto	4	6 2 7 do.	26 0 28	
Tack, iron ..... ewt.	2 0 0	1 1 25 lbs.	294 0 0	
Heads, powder barrel, 50 lbs. old	81	0 1 50 each	30 1 50	
Hoops, copper, powder barrel, 90 lbs. ..... doz.	15	1 1 32 do.	19 3 80	
——————, 50 lbs. do.	378	1 1 32 do.	502 2 96	
Staves, powder barrel, 90 lbs. old	61	0 1 0 do.	15 1 0	
——————, 50 do. do.	908	0 1 0 do.	227 0 0	
				4,219 0 50
Nov. Iron, bolt, ½ inch ..... ewt.	9 3 23			
——, 1½ ditto ..... ditto	55 0 4			
——, 1 ditto ..... ditto	31 0 27			
——, ¾ ditto ..... ditto	19 0 20	cwt. 213 3 11 at 9 0 83 cwt.	1,969 0 3	
——, flat, bar, 4 inch .... ditto	9 0 17			
——————, 3½ ditto .... ditto	6 2 25			
——————, 3 ditto .... ditto	55 1 12			
——————, 1½ ditto .... ditto	26 1 7			
——————, 1 ditto .... ditto	0 3 16			
Arbors for holding knives	2			
Bed, cast iron, for machine for cutting elevating screws	1			
Fly-wheel, cast iron, 5 ft. 5 inch	1			
Frame, iron, with brass bearings, and 2 wheels and spindles for machine for cutting elevating screws	1	.....	2,489 3 55	
Handles, wooden, for fly-wheel, cast iron	1			
Knives, for male and female screws	24			
Regulating screw, left-handed..	1			
——————— right ditto ...	2			
Fly-wheel, for machines, blowing	2	.....	617 2 96	
Iron work, mortar bed, 13 inch, weighing 29 2 20.....sets	6			
——————, 10 inch, do. 31 2 21 ..... sets	6			
——————, 8 inch, do. 31 3 7 ..... sets	10	.....	8,247 3 85	
——————, 5½ inch, do. 17 0 22 ..... sets	12			
——————, howitzer, 10 in. weighing 14 2 23 .....sets	4			
——————, 8 in. weighing 10 1 10 .....sets	4			
——————, 5½ in. weighing 12 2 9 .....sets	6	.....	3,536 3 10	
——————, 4½ in. weighing 3 3 22 .....sets	4			
				16,861 1 49

Statement of Gun-carriage Department for the Year 1827–28.—*Continued.*

Receipts.

Names of Articles.	Quantity.	Rate.	Amount.	Total.
1827.		*r. a. p.*	*r. a. p.*	
July. Aprons, wooden, 32 pounder ..	37	2 3 45 each	105 3 65	
———————, 24 ditto	99	2 3 45 do.	283 1 55	
———————, 18 ditto	39	2 3 45 do.	111 2 55	
Barrels, powder, empty, 50 lbs., with 4 copper hoops each ..	280	10 0 54 do.	2,837 3 20	
Barrows, wheel	7	37 0 27 do.	259 1 89	
Beaters, hand, wooden	5	1 2 0 do.	7 2 0	
Benches, paring	6	36 2 0 do.	219 0 0	
Boxes, ammunition, musket....	166	32 0 50 do.	601 3 0	
Chest, laboratory, new pattern..	1	55 3 52 do.	55 3 52	
Choakes, wooden, magazine....	1,550	0 1 67 do.	647 0 50	
Coins, wooden, spare 10 inch ..	8	2 0 63 do.	17 1 04	
———————, 8 ditto ..	4	2 0 63 do.	8 2 52	
Cutters, portfire	12	12 2 76 do.	152 1 12	
Doolies, hospital	27	25 2 72 do.	693 1 44	
Tellies, teak, rough	100	4 1 11 do.	427 3 0	
Gin, field	2	330 1 67 do.	660 3 34	
Grate, iron, for heating shot....	1	364 1 33 do.	364 1 33	
Handspikes, purchasing	94	14 1 54 do.	1,352 0 76	
Helves for pickaxes	225	0 3 0 do.	168 3 0	
Horses, wooden, magazine	380	13 2 70 do.	5,196 2 0	
Ladders, scaling, joint	29	39 0 0 do.	1,131 0 0	
Moulds, bullet, musket, brass ..	5	22 2 33 do.	112 3 65	
Platforms, mortar	2	298 1 90 do.	596 3 80	
———————, traversing	2	331 1 39 do.	662 2 78	
Skids, east iron, for supporting guns	10	52 2 33 do.	525 3 30	
Spokes, teak, rough	100	3 2 25 do.	356 1 0	
Tables, laboratory	2	35 1 6 do.	70 2 12	
Trestle, faseine.....	25	9 1 33 do.	233 1 25	
Triangles, weighing	5	46 2 97 do.	233 2 85	
				18,094 2 16
Aug. Aprons, wooden, 32 pounder ..	16	2 3 45 do.	45 3 20	
———————, 24 ditto	35	2 3 45 do.	100 0 75	
Barrels, powder, empty, 50 lbs. with 4 copper hoops each ..	91	10 0 54 do.	922 1 14	
Barrows, wheel	6	37 0 27 do.	222 1 62	
Beds for gun, 12 pounder	6	6 2 0 do.	39 0 0	
Block iron, double, with brass sheaves	3	23 0 33 do.	69 0 99	
Boxes, ammunition, musket....	360	3 2 50 do.	1,305 0 0	
Bucket, fire, wooden	12	4 0 74 do.	50 0 88	
Coins, wooden, for gun, 12 pounder	6	2 0 63 do.	12 3 78	
———————, spare, 10 inch ...	9	2 0 63 do.	19 1 67	
———————, 8 ditto ...	3	2 0 63 do.	6 1 89	
Cutters, portfire, spare	12	12 2 76 do.	152 1 12	
Doolies, hospital	22	25 2 72 do.	564 3 84	
Handspikes, purchasing, Eynee wood	100	14 1 54 do.	1,438 2 0	
Helves for pickaxes...	78	0 3 0 do.	58 2 0	
Horses, magazine, wooden	90	16 3 40 do.	1,516 2 0	
Ladders, scaling, joint.....	33	39 0 0 do.	1,287 0 0	
Pickets, pack	30	16 0 35 do.	482 2 50	
Skids, iron, for supporting guns.	4	52 2 33 do.	210 1 32	
Triangles, weighing	4	46 2 97 do.	186 3 88	
				8,690 2 58
Sept. Barrels, powder, empty, 50 lbs., with copper hoops each	100	10 0 54 do.	1,013 2 0	
Boxes, ammunition, musket....	170	3 2 50 do.	616 1 0	
Barrows, wheel.....	2	37 0 27 do.	74 0 54	
Handspikes, purchasing	15	14 1 54 do.	215 3 10	
Ladder, scaling, joints	10	39 0 0 do.	390 0 0	
Sticks, rocket, with iron sockets, 32 pounder	54	1 1 61 do.	75 2 94	
———————, 24 ditto ..	54	1 1 61 do.	75 2 94	

Statement of Gun-carriage Department for the Year 1827–28.—*Continued.*

Issues.

Names of Articles.	Quantity.	Rate.	Amount.	Total.
1828.				
Jan. Heads, powder, barrel, 50 lbs....	929	r. a. p. 1 1 0 each	r. a. p. 1,161 1 0	
Hoops, copper, powder barrel do.	2722	22 0 20 mdl.	4,822 2 60	
Staves, powder barrel	9814	0 1 0 each	2,453 2 0	
Bellows, forge, small, Europe, pairs	4	128 0 53 do.	512 2 12	
Drum shells, unserviceable	4	6 0 46 do.	24 1 84	
Hoes, mamoties, Europe	12	2 0 86 do.	26 2 32	
				9,000 3 88
Feb. Augers, Europe, 1¼ inch	100	0 3 30 each	82 2 0	
Coals, Europe ..... chaldrons	20	28 2 96 chald.	574 3 20	
Iron, bolt ..... cwt.	20 0 0	11 3 55 cwt.	237 3 0	
Tin, sheets	100	4 2 0	22 2 0	
Tires, wheel, for sling cart	10	4 0 0 each.	40 0 0	
Iron, rod ..... cwt.	15 0 0	11 3 99 cwt.	179 3 85	
Bar, brass, with teeth	1	98 2 0 each.	98 2 0	
Bars, traversing, carronade	74	2 3 75 do.	217 1 50	
Bolts, tughting, 12 pounder....	5	25 0 0 do.	125 0 0	
——, housing mortar bed, 13 inch	2	20 2 60 do.	41 1 20	
——————, 5¼ do.	2	20 2 60 do.	41 1 20	
——————, 32 pounder....	4	20 2 60 do.	82 2 40	
——, trunnion, 32 ditto.....	8	21 0 0 do.	168 0 0	
——————, 12 ditto	2	21 0 0 do.	42 0 0	
Boxes, brass, convertible	532	77 2 0 do.	41,230 0 0	
Box, nave, cast iron, 6 pounder .	1	1 2 0 do.	1 2 0	
——————, 3 ditto ..	2	1 2 0 do.	3 0 0	
Carriages, ship, ——, 24 ditto ..	2	242 0 0 do.	484 0 0	
——————, 18 ditto ..	18	186 1 23 do.	3,353 2 14	
——————, 12 ditto ..	2	134 1 45 do.	268 2 90	
——————, 9 ditto ..	5	349 2 51 do.	1,748 0 55	
——————, 6 ditto ..	3	120 1 50 do.	361 0 50	
———, carronade, block, 18 ditto	18	250 0 0 do.	4,500 0 0	
——————, cheek, pounder	2	250 0 0 do.	500 0 0	
——————, —— 12 ditto	5	134 3 0 do.	673 3 0	
——— with slide, —— 24 ditto	1	268 2 91 do.	268 2 91	
——————, —— 18 ditto	1	161 2 30 do.	161 2 30	
——————, —— 12 ditto	1	82 0 27 do.	82 0 27	
——— block, —— 12 ditto	17	134 3 0 do.	2,290 3 0	
——— cheek, —— 24 ditto	11	134 3 0 do.	1,482 1 0	
Iron work for battering limber, 12 pounder, 15 sets .... cwt.	29 1 3	37 3 94 cwt.	1,112 0 31	
——— box, ammunition, 100 sets, 5¼ inch ..... cwt.	37 1 4	37 1 13 do.	1,390 0 41	
——— for box, ammunition, 200 sets, 6 pounder .... cwt.	68 2 22	37 1 13 do.	2,561 0 69	
——— for box, ammunition, 12 pounder, 75 sets .... cwt.	27 3 15	37 1 13 do.	1,039 2 33	
——— of sorts..... do.	21 1 2	37 1 13 do.	792 3 67	
——— for box, ammunition, 75 sets, 9 pounder .... cwt.	27 2 21	37 1 13 do.	1,032 1 6	
Naves, brass, with brass box ..	35	103 1 31 do.	3,616 1 85	
Pentails, limber, iron	5	5 0 0 do.	25 0 0	
Plates, trail, bed, carronade....	27	2 2 0 do.	67 2 0	
Trunnion, shoulder, brass	1	3 2 0 do.	3 2 0	
				70,953 1 24
March. Boxes, brass, unserviceable	84	51 2 0 do.	4,326 0 0	
Carriage and limber forge travelling, English, muster	1	352 0 0	352 0 0	
Heads, powder barrel, old, 90 lbs.	30	0 3 32 do.	24 3 60	
——————, 50 ditto	476	0 3 32 do.	395 0 22	
Hoops, copper, old, 90 lbs.....	616	0 3 54 do.	545 0 64	
——————, 50 lbs.....	2698	0 3 54 do.	2,387 2 92	
Staves, powder barrel, old, 90 lbs.	630	0 2 66 do.	418 3 80	
——————, 50 lbs.	31,695	0 2 66 do.	21,077 0 70	
				29,526 3 98

Statement of Gun-carriage Department for the Year 1827-28.—*Continued.*

RECEIPTS.

Names of Articles.	Quantity.	Rate.	Amount.	Total.
1827.				
Sept. Sticks, rocket, with iron sockets, 18 pounder	52	*r. a. p.* 1 1 61 each	*r. a. p.* 72 3 72	
——, portfire	46	1 0 0 do.	46 0 0	
Triangle, weighing	1	46 2 97 do.	46 2 97	
Yokes, single, spare	100	5 0 35 do.	508 3 0	
——— for traces, N.P.	100	18 3 79 do.	1,894 3 0	
				5,030 1 21
Oct. Barrels, powder, empty, 50 lbs., with 4 copper hoops each	41	10 0 54 do.	415 2 14	
Barrows, wheel	4	37 0 27 do.	148 1 8	
Boxes, ammunition, musket	125	3 2 50 do.	453 0 50	
Doolies, hospital	40	25 2 72 do.	1,027 0 80	
				2,044 0 52
Nov. Boxes, ammunition, musket	125	3 2 50 do.	453 0 50	
Carriages, cheek, howitzer, with limber, iron-naved wheel, complete, General Miller's pattern, 10 inch	1	2,486 1 38 do.	2,486 1 38	
———, garrison, for short gun, complete, with 2 coins each, 6 pounder	11	280 3 96 do.	3,090 3 56	
Staves, rocket, signal, 2 pounder	300	1 1 61 do.	420 3 0	
———, 1 ditto	300	1 1 61 do.	420 3 0	
———, ½ ditto	300	1 1 61 do.	420 3 0	
———, ¼ ditto	300	1 1 61 do.	420 3 0	
Chest, laboratory	1	55 3 52 do.	55 3 52	
Doolies, hospital	12	25 2 72 do.	308 0 64	
				8,077 1 60
Dec. Barrows, wheel	4	37 0 27 do.	148 1 8	
Boxes, ammunition, musket	125	3 2 50 do.	453 0 50	
Doolies, hospital	22	25 2 72 do.	564 3 84	
Mallets, Ghurry-wood	1	1 0 55 do.	1 0 55	
Platform, mortar, complete	1	268 0 87 do.	268 0 87	
				1,435 2 84
1828.				
Jan. Barrels, powder, empty, 100 lbs., with 4 copper hoops each	3	14 0 88 do.	42 2 64	
———, 50 lbs., do.	441	10 0 54 do.	4,469 2 14	
Barrows, wheel	3	37 0 27 do.	111 0 81	
Doolies, hospital	19	25 2 72 do.	487 3 68	
Boxes, ammunition, musket	180	3 2 49 do.	652 0 20	
Slide for boat, 3 pounder	1	51 0 98 do.	51 0 98	
				5,814 2 45
Feb. Barrels, powder, empty, 50 lbs., with 4 copper hoops each	180	10 0 54 do.	1,824 1 18	
Beds, cheek, mortar, 8 inch, with elevating screws, complete	10	594 2 55 do.	5,946 1 50	
Carriages, block, T.P., with limbers and iron-naved wheels, complete, 12 pounder	8	1,680 0 0 do.	13,440 0 0	
———, ammunition, body, with limbers and iron-naved wheels, complete, 12 pounder	2	1,720 0 0 do.	3,440 0 0	
———, 6 ditto	10	1,700 0 0 do.	17,000 0 0	
———, 5½ ditto	4	1,720 0 0 do.	6,880 0 0	
Carts, sling, field, with limbersand iron-naved wheels, complete	3	1,647 0 98 do.	4,941 2 94	
——, platform, with navedwheels, light, new pattern, complete	6	786 3 67 do.	4,721 2 2	
Doolies, hospital	13	25 2 72 do.	333 3 36	
Platform, barbatle, complete	1	331 1 39 do.	331 1 39	
Yokes, trace, new pattern	100	8 0 0 do.	800 0 0	
Carts, platform, with iron-naved wheels, light, old pattern, complete	30	486 3 67 do.	14,607 2 10	
				71,266 2 49

Statement of Gun-carriage Department for the Year 1827–28.—*Continued.*

Issues.

Names of Articles.	Quantity.	Rate.	Amount.	Total.
1828.				
April. Saws, hand, Europe	80	*r. a. p.* 2 3 45 cwt.	*r. a. p.* 229 0 0	
Staves, spunge, ash	50	0 3 92 do.	49 0 0	
Trucks, cast iron, small	0	0 0 0 do.	0 0 0	
Tin, sheets	100	4 2 0	22 2 0	
				300 2 0
			Rupees	1,48,878 0 62

Statement of Gunpowder Department for the Year 1827-28.

Issues.

Names of Articles.	Quantity.	Rate.	Amount.	Total.
1827.				
May. Barrels, powder, empty, 50 lbs.		*r. a. p.*	*r. a. p.*	
with 4 copper hoops each....	1,000	10 0 54 each	10,135 0 0	
Powder, cannon, dried & sifted, lbs.	9,917	2 0 0 lb.	198 1 36	
Sulphur, refined, weighing 1000 cwt. .....casks	200	8 1 22 cwt.	8,305 0 0	
				18,638 1 36
June. Barrels, powder, empty, 50 lbs., with 4 copper hoops each ...	900	10 0 54 each	9,121 2 0	
				9,121 2 0
Sept. Tent routies, No. 3, complete..	3	67 2 0 do.	202 2 0	
				202 2 0
Oct. Clock, register.....	1	48 3 36	48 3 36	
Barrels, powder, empty, 50 lbs., with 4 copper hoops each....	1,300	10 0 54 each	13,175 2 0	
Powder, cannon, dried & sifted, lbs.	14,923	1 1 32 lb.	198 1 90	
Bottoms, sieve	4	.....	6 2 4	
Hoops for sieves .....sets	50	.....	52 3 55	
Sieves, brass-wire, 36 holes....	3			
————————, 30 ditto	3			
————————, 24 ditto	3	.....	75 0 56	
Sieves, brass-wire, 18 ditto....	3			
————————, 14 ditto	3			

Statement of Gun-carriage Department for the Year 1827–28.—*Continued.*

Receipts.

Names of Articles.	Quantity.	Rate.	Amount.	Total.
1828.				
March. Barrels, powder, empty, 50 lbs., with 4 copper hoops each ...	130	*r. a. p.* 10 0 54 each	*r. a. p.* 1,317 2 20	
Blocks, iron, double, with brass sheaves	4	23 0 33 do.	92 1 32	
Boxes, ammunition, musket....	60	3 2 49 do.	217 1 40	
Doolies, hospital	9	25 2 72 do.	231 0 48	
Fillies, rough, 1st size	2	4 1 11 do.	8 2 22	
———, 2nd ditto	48	4 1 11 do.	205 1 28	
———, 3rd ditto	100	4 1 11 do.	427 3 0	
Gins, field	2	277 1 50 do.	554 3 0	
Ladder, scaling, joint	20	32 1 76 do.	648 3 20	
Platforms, gun, traversing, complete	3	331 1 39 do.	994 0 17	
———, mortar, complete ..	7	268 0 87 do.	1,877 2 9	
Scales, tangent, for T.P. 18 pounder	10	14 3 70 do.	149 1 0	
———————, 6 ditto.	10	14 3 70 do.	149 1 0	
Spokes, rough, 1st size	5	3 2 25 do.	17 3 25	
———————, 2nd ditto	36	3 2 25 do.	128 1 0	
———————, 3rd ditto	110	3 2 25 do.	391 3 50	
Limbers, field-piece, 6 pounder.	7	767 1 81 do.	5,372 0 67	
				12,783 2 78
April. Ball, iron, Eprouvelle, (66-pounder)	1	24 2 8 do.	24 2 8	
Boxes, ammunition, musket	295	3 2 49 do.	1,068 2 55	
Carriages, carronade, 18 pounder, complete	8	161 2 30 do.	1,292 2 40	
———, forge, with limber and a spare wheel, complete	1	352 0 0 do.	352 0 0	
Ladders, scaling, joints	10	32 1 76 do.	324 1 60	
Platforms, mortar, complete ...	1	268 0 87 do.	268 0 87	
———, traversing, ditto	1	331 1 39 do.	331 1 39	
Shafts, spare ..... pair	10	22 1 74 do.	224 1 40	
				3,886 0 29
			Rupees.....	182,121 1 41

Statement of the Gunpowder Department for the Year 1827-28.

Receipts.

Names of Articles.	Quantity.	Rate.	Amount.	Total.
1827.				
July. Barrels, powder, empty, 50 lbs., with 4 copper hoops each....	33	*r. a. p.* 10 0 54 each	*r. a. p.* 334 1 82	
Saltpetre, refined, ...lbs.	1,000	9 1 72 cwt.	84 0 78	
Sulphur ditto .....do.	650	7 3 40 md.	182 0 92	
				600 3 52
Nov. Barrels, powder, empty, 100 lbs., with 4 copper hoops each....	19	14 0 88 each	270 0 72	
———————, 50 lbs., with 4 copper hoops each....	1,693	10 0 54 do.	17,156 2 22	
Powder, cannon,.....lbs.	56,600	0 1 96 lb.	27,734 0 0	
———, fine, ...do.	11,800	0 1 96 do.	5,782 0 0	
———, cannon, damaged, ..do.	2,100	0 0 65 do.	341 1 0	
———————, dried and sifted, lbs.	12,940	2 0 0 do.	278 3 20	
Charcoal, ground, ...do.	345	0 0 18 do.	15 2 10	
Saltpetre, refined, ...do.	600	9 1 72 cwt.	50 2 7	
				51,630 3 31
Dec. Barrels, powder, empty, 50 lbs., with 4 copper hoops each....	867	10 0 54 each	8,787 0 18	
Powder, cannon, dried and sifted, lbs.	27,709	2 0 0 lb.	554 0 72	

Statement of Gunpowder Department for the Year 1827-28.—*Continued.*

Issues.

Names of Articles.	Quantity.	Rate.	Amount.	Total.
1827.		*r. a. p.*	*r. a. p.*	
Oct. Balls, brass, ¾ inches diameter..	200	84 1 66 each	16,883 0 0	
				30,440 1 41
Nov. Barrels, powder, empty, 50 lbs. with 4 copper hoops each....	300	10 0 54 do.	3,040 1 0	
Powder, cannon, dried and sifted, rep.....lbs.	14,743	1 1 2 lb.	196 0 32	
Cylinders, iron, for burning charcoal	1	102 0 67 each	102 0 67	
Levers, iron, for press	4	81 2 71 do.	326 2 84	
				3,665 0 83
Dec. Barrels, powder, empty, 50 lbs., with 4 copper hoops each....	587	10 0 54 do.	5,949 0 98	
Powder, cannon, dried and sifted, lbs.....	29,350	2 0 0 lb.	587 0 0	
				6,536 0 98
1828.				
Jan. Barrels, powder, empty, whole, with 4 copper hoops each	43	14 0 88 each	611 1 84	
——————, 50 lbs., with 4 copper hoops each....	1,299	10 0 54 do.	13,165 1 46	
Powder, cannon, dried andsi fted, lbs.....	29,700	2 0 0 lb.	594 0 0	
——— fine, dried and sifted, lbs.	50	2 0 0 do.	1 0 0	
Barrels, powder, copper, English, 100 lbs.	1	37 2 62 lb.	37 2 62	
——————, 50 lbs.	2	26 3 78 do.	53 3 56	
Compasses, caliber, large size ..	1	30 2 22	30 2 22	
——— ———, small do. ...	1	20 0 0	20 0 0	
Glasses, time, half minute.....	6	1 1 0	7 2 0	
Scale, Gunter, brass, 2 feet....	1	22 0 0	22 0 0	
				14,543 1 70
Feb. Barrels, powder, empty, 90 lbs., with 4 copper hoops each....	64	14 0 88 each	910 0 32	
——————, 50 lbs., with 4 copper hoops each....	684	10 0 54 do.	6,932 1 36	
Powder, cannon, dried and sifted, lbs.....	29,890	2 0 0 lb.	597 3 20	
Balls, brass, small, weighing 44½	400	84 1 66 each	33,766 0 0	
				42,206 0 88
March. Barrels, powder, empty, 90 lbs., with 4 copper hoops each....	164	14 0 88 each	2,332 0 32	
——————, 50 lbs., with 4 copper hoops each....	679	10 0 54 do.	6,881 2 66	
Powder, cannon, dried and sifted, lbs.	27,159	2 0 0 lb.	543 0 72	
Ball, brass, weighing 32 lbs. ..	301	84 1 66 each	25,408 3 66	
——, iron, Eprouvelle, 68 lbs. ..	1	24 2 8 do.	24 2 8	
				35,190 1 44
April. Barrels, powder, empty, 90 lbs., with 4 copper hoops each....	262	14 0 88 each	3,725 2 56	
——————, 50 lbs. with 4 copper hoops each....	1,130	10 0 54 do.	11,452 2 20	
Powder, cannon, dried and sifted, lbs.....	50,080	2 0 0 lb.	1,001 2 40	
Ball, brass, 4 inch.....	200	84 1 66 each	16,883 0 0	
——, iron, Eprouvelle, with keys, 68 lbs.	2	24 2 8 do.	49 0 16	
Cylinders, iron, large.....	4	102 0 67 do.	408 2 68	
				33,520 2 0
			Rupees.....	194,064 2 60

Statement of Gunpowder Department for the Year 1827-28.—*Continued.*

Receipts.

	Names of Articles.	Quantity.	Rate.	Amount.	Total.
1827.			*r. a. p.*	*r. a. p.*	
Dec.	Powder, cannon, new powder, lbs.	12,500	0 1 96 lb.	6,125 0 0	
	———, fine, new powder. . .lbs.	2,500	0 1 96 do.	1,225 0 0	
	Saltpetre, refined, ... do.	600	9 1 72 cwt.	50 2 7	
1828.					16,741 2 97
Jan.	Barrels, powder, empty, 50 lbs., with 4 copper hoops each....	1,070	10 0 54 each	10,844 1 80	
	Powder, cannon, dried and sifted, lbs.....	28,482	2 0 0 pr100	569 2 56	
	———, cannon, new powder, lbs.	18,750	0 1 96 lb.	9,187 2 0	
	———, fine, new powder. . .do.	6,250	0 1 96 do.	3,062 2 0	
					23,664 0 36
Febr.	Barrels, powder, empty, 50 lbs., with 4 copper hoops each....	1,167	10 0 54 each	11,827 2 18	
	Powder, cannon, dried and sifted, lbs.....	28,350	2 0 0 pr100	567 0 0	
	———————, new powder, lbs.	21,250	0 1 96 lb.	10,412 2 0	
	———, fine, new powder . .do.	8,750	0 1 96 do.	4,287 2 0	
					27,094 2 18
March.	Barrels, powder, empty, 90 lbs., with 4 copper hoops each....	60	14 0 88 each	853 0 80	
	———————, 50 lbs., with 4 copper hoops each....	649	10 0 54 do.	6,577 2 46	
	Powder, cannon, dried and sifted, lbs.....	14,350	2 0 0 pr100	287 0 0	
	———————, new powder, lbs.	16,500	0 1 96 lb.	8,085 0 0	
	———, fine, new powder. . .do.	7,000	0 1 96 do.	3,430 0 0	
					19,232 3 26
April.	Barrels, powder, empty, 90 lbs., with 4 copper hoops each....	406	14 0 88 each	5,773 1 28	
	———————, 50 lbs., with 4 copper hoops each.....	913	10 0 54 do.	9,253 1 2	
	Powder, cannon, dried and sifted, lbs.....	54,690	2 0 0 pr100	1,093 3 20	
	———————, new powder, lbs.	14,750	0 1 96 lb.	7,227 2 0	
	——— fine, new powder . . .do.	12,750	0 1 96 do.	6,247 2 0	
					29,595 1 50
				Rupees.....	168,560 1 10

Statement of Articles of various Descriptions made up in the Gun-carriage Manufactory, and Supplies to the different Departments, from 1st of May 1827 to the 30th of April 1828; exhibiting also their costs.

Bombay Gun-carriage Office, 9th April, 1829.

Names of Articles.	Rate.	Amount.	Total.	Grand Total.
For and to the Commissary of Stores.	*r. a. p.*	*r. a. p.*		
314 aprons, wooden, of sorts.....	5 3 86 each	1,873 0 4		
4 balls, cast iron, Eprouvelle.....	18 1 10 do.	73 0 40		
1,345 barrels, powder, 50 lbs., with 4 copper hoops each.....	11 2 75 do.	15,719 2 75		
28 barrows, wheel	37 0 27 do.	1,037 3 56		
5 beaters, hand, wooden.....	2 0 do.	2 2 0		
14 beds, cheek, mortar, with elevating screws complete, 8 in.	465 1 91 do.	6,516 2 74		
5 beds, cheek, howitzer, heavy, complete, 5⅓ in.	233 2 14 do.	1,167 2 70		
6 benches, paring .....at	31 1 44 do.	188 0 64		
7 blocks, iron, double and treble, with brass sheaves.....	36 0 0 do.	252 0 0		
1988 boxes, ammunition, musket..	3 2 49 do.	7,201 2 12		
8 carriages, ammunition body, with limber and iron-naved wheels, complete, 12 pr.....at	1,720 0 0 do.	13,760 0 0		
4 ———, 9 pr. .....at	1,640 3 13 do.	6,563 0 52		
11 ———, 6 pr. .....at	1,583 2 40 do.	1,7419 2 40		
4 ———, 5⅓ in. .....at	1,640 3 13 do.	6,563 0 52		
8 ———, block field piece, with limbers and iron-naved wheels complete, 12 pr., inch .....at	1,680 0 0 do.	13,440 0 0		
2 ———, block, howitzer, light, with limbers and iron-naved wheels complete 5⅓ inch .....at	do. do. 1,680 0 0 do.	3,360 0 0		
1 ———, cheek, howitzer, iron, with limber and iron-naved wheels complete, 5⅓ inch .....at	1,988 0 40 do.	1,988 0 40		
11 ———, garrison, with iron trucks complete, 6 pr. .....at	280 3 96¼ do.	3,090 3 60	[1]	
1 ——— howitzer, with limbers and iron-naved wheels, &c., complete, 10 inch, General Miller's pattern	....	2,486 1 38		
6 ——— travelling, for battering-gun, with limbers and iron-naved wheels, 18 pr., complete	2,209 3 11 do.	13,258 2 66		
60 carts, platform, with iron-naved wheels, complete	486 3 67 do.	29,215 0 20		
9 ——, sling, field, with limbers and iron-naved, wheels complete....	1,647 1 0 do.	14,825 1 0		
8 chests, laboratory.....	44 0 97 do.	353 3 76		
2,000 chokes, wooden, for magazine	98 do.	490 0 0		
10 choakers, fascine	2 1 0 do.	22 2 0		
12 cutters, port fire	6 2 80 do.	80 1 60		
155 doolies, hospital	25 2 72 do.	3,980 1 60		
16 forks, sap.....	7 1 0 do.	116 0 0		
6 gins, field	230 1 67 do.	1,582 2 2		
209 handspikes, purchasing.....	4 0 0 do.	836 0 0		
52 ———, train	5 0 0 do.	260 0 0		
2503 helves for tools, of sorts....	1 0 0 do.	2,503 0 0		
645 horses, wooden, magazine....	1 0 0 do.	161 1 0		
1 jack rope, or machine for making spun yarn, large.....	....	198 1 0		
59 ladders, scaling, joints.....	32 1 76 each	1,913 3 84		
7 limbers, spare field piece, complete, 6 pr., made up from altering old ammunition tumbrels. ..	279 1 0 do.	1,954 3 0		
10 moulds, bullet, brass, for king's pistol.....	5 0 82 do.	52 0 20		
1 mould, port fire, brass	35 1 25 do.	35 1 25		

N. B. In this list the barrack, hospital, and office furniture made up (in this year) is not included; neither is the repair of carriages, nor that of articles of various descriptions for other departments.

The prices of the articles constructed depend on the rates of stores and supplies furnished by the Commissariat and of those received from England for the use of the Department.

[1] For the use of the grand arsenal.

Statement of Articles, &c.—*Continued.*

Names of Articles.	Rate.	Amount.	Total.	Grand Total.	
	r. a. p.	r. a. p.			
30 pickets, park	12 0 0 each	360 0 0			[1]
1 platform, barbet, traversing, with cast iron trucks	.....	388 1 25			[1]
13 ———, mortar	270 0 0 do.	3,510 0 0			[1]
8 ———, traversing, field	350 0 0 do.	2,800 0 0			[1]
1 post, wooden, large, with iron rings, &c., for the Castle flag-staff	.....	46 1 33			[1]
20 scales, tangent, brass, complete	4 0 0 do.	80 0 0			[1]
16 skids, iron, for supporting heavy guns	60 2 50 do.	970 0 0			[1]
46 sticks, port fire	1 3 0 do.	80 2 0			[1]
16 ——, rocket, of sorts	4 0 0 do.	64 0 0			[1]
2 tables, laboratory	29 0 0 do.	58 0 0			[1]
6 traps, rat	3 2 0 do.	21 0 0			[1]
40 trestles, wooden	4 2 0 do.	180 0 0			[1]
223 yokes, single or pole	5 0 0 do.	1,115 0 0			[1]
200 ditto, trace	7 0 0 do.	1,400 0 0			[1]
			185,415 3 48		
6 beds, wooden, spare, for carronade carriage ..... 12 pr.	3 2 89½ do.	22 1 37			[2]
12 buckets, fire, wooden	3 2 10 do.	42 1 20			[2]
8 carriages, carronade, complete, 18 pr.	154 1 37 do.	1,234 2 98			[2]
40 coins, wooden, of sorts	3 71 do.	37 0 40			[2]
1 slide, gun, complete ..... 3 pr.	.....	51 0 58			[2]
			1,387 2 93		
				186,803 2 41	
1 beam, scale, iron, 6 feet [3]	.....	114 1 0			
1 ————————, 3 do. [4]	.....	64 0 97			
1 bell, brass, with wooden stock, wheel, and iron clapper, rings, axles, &c., &c., complete [5]	.....	335 1 55			
1 ————————, with iron axles, clapper and rings, and wooden stock, wheels, &c., complete [6]	.....	246 0 51			
For and to the Commandant of Artillery.			760 0 3	760 0 3	
11 frames, shot, wooden	5 2 0 do.	60 2 0			[7]
6 rollers, wooden, for rolling heavy guns	3 1 0 do.	19 2 0			[7]
For and to the Secretary of the Native School-Book School Society.			80 0 0	80 0 0	
2 presses, iron, lithograph., complete [8]	115 1 67 do.	230 3 34	230 3 34	230 3 34	
For and to the Agent for Gunpowder.					
1101 balls, brass, ¾ inch	72 do.	198 0 72			[9]
3 ——, cast iron, Eprouvelle, with iron keys	24 2 8 do.	73 2 24			[9]
1 cylinder, ship, iron, large, complete	.....	108 0 5			[9]
4 levers, iron, for press, large	81 2 71½ do.	326 2 86			[9]
For and to the Director of the Artillery Depôt.			706 1 87	706 1 87	
2 balls, cast iron, Eprouvelle, 68 lbs. each, with iron keys ..... at	31 2 57 do.	63 1 14			[10]
1 bell, brass, complete, (re-cast)	.....	131 0 53			[10]
4 knees, cast iron, large	35 0 46¼ do.	140 1 86			[10]
			334 3 53	334 3 53	
6 crowbars, iron, large, of sorts	4 0 96 do.	25 1 77			[11]
1 frame, wooden, large, for water-well	.....	100 1 86			[11]
1 ————————, with iron bolts and brass clamps, &c., complete, to support transit instrument	.....	97 1 46			[11]
			223 1 9	223 1 9	

[1] For the use of the grand arsenal.
[2] For the use of the Honourable Company's vessels.
[3] For the use of the warehouse-keeper.
[4] For the use of the powder-works.
[5] For the use of the church at Coolaba.
[6] For the use of the church at Rutnacherry
[7] For the use of the different fortifications.
[8] For printing.
[9] For the use of the powder-works.
[10] For the use of the depôt.
[11] For the use of erecting observatory at Coolaba.

Statement of Articles, &c.—*Continued.*

Names of Articles.	Rate.	Amount.	Total.	Grand Total.	
For and to the Honourable Company's Astronomer.	*r. a. p.*	*r. a. p.*			
1 hammer, iron, large	.....	3 0 62			
1 handle, iron, for grinding-stone..	.....	2 0 74			
1 hatchet, iron, large	.....	3 1 77			
1 model, wooden, of the observatory (now building at Coolaba), scale $\frac{1}{2}$ inch to a foot	.....	248 1 95			
20 rings, iron, large.....	5 2 41 each	112 0 20			
1 shovel, iron, large, with wooden long handle	3 2 82 do.	3 2 82			[1]
1 table, teak-wood, large, with a lid and several divisions, 9 inches square each, to receive chronometers.....	.....	132 2 32			
1 trough, wooden, 300 feet long, 6 inches wide, and 6 inches deep	.....	390 0 52			
1 wheel, wooden, complete, for drawing water from well	.....	292 0 56			
For and to the Marine Storekeeper.			1,148 2 60	1,148 2 60	
1 dog-bolt, large, iron .....at	.....	10 2 33			
2 dredges, iron.....	20 2 52 do.	41 3 4			
1 lid, cast-iron, for a tank, iron ...	.....	6 0 66			
1 plate, with rollers, cast iron, according to pattern furnished....	.....	10 3 78			[2]
1 roller, cast iron, with wrought iron bolt	.....	31 3 51			
For and to the Honourable the Governor.			101 1 32	101 1 32	
1 soush, cast iron	.....	10 3 56			
			10 3 56	10 3 56	
2 telegraphs, complete [3] .....at	294 2 4½ do.	589 0 9	589 0 9	589 0 9	
(Errors Excepted.)			Rupees.....	190,765 2 75	

(Signed.) A. Manson,
Agent for Gun-carriages.

[1] For the use of erecting observatory at Coolaba.
[2] For the use of the marine department.
[3] For the use of the signal.

Account Current.

Dr. Gun-carriage Manufactory.

1825.							
May 1. To Balance, viz.					*r.*	*a.*	*p.*
Articles prepared for supplies					29,032	1	61
Unfurnished in hands.....					173,635	2	38
							202,667 3 99
1826.							
Ap. 30. To Expenditure of Stores for the Year 1825–26.		*r.*	*a.*	*p.*			
129 axletrees, iron, of sorts, weighing 224 1 19..md.		10	2	88⅓	9,622	1	52
54½ candies babool firewood.....Cy		3	1	97	190	1	36
144 baskets, rattan .....each		0	2	21⅔	79	2	85
2 pounds black lead dust.....per lb.		0	1	0	0	2	0
50 blocks, circular.....per 100		55	2	22	27	3	11
50 3 $26\frac{6}{16}$ brass confortible .....per lb.		0	2	7⅓	2,961	1	84
41 pairs bolts, brass, for bookcase.....per pair		1	1	54	56	3	14
36 lbs. borax .....per lb.		0	1	98	17	3	77
30 1 12¾ brass, cake..... do.		0	1	86	1,581	1	37
$15\frac{3}{16}$ lbs. brass, sheet.....			....		7	2	68
2¼ lbs. do. plate			....		1	0	50
357 bricks, China .....each		0	1	51	134	3	29
14,159 bricks, Europe ..... do.		0	0	42¾	1,495	3	88
22 brooms, common ..... do.		0	0	16⅔	0	3	66

Quantity of Gunpowder issued during the Years 1826, 1827, and 1828.

	Common Powder. lbs.	oz.	dr.	Fine Powder. lbs.	oz.	dr.
Quarter ending 30th April 1826	7,002	0	0	14,508	0	0
31st July	124,172	2	0	42,183	0	0
31st October	4,337	10	0	9,645	0	0
31st January 1827	90,143	18	0	30,682	0	0
30th April	32,615	0	0	31,528	0	0
31st July	18,341	0	0	4,944	9	0
31st October	25,267	0	0	8,916	9	0
31st January 1828	99,326	0	0	5,772	0	0
31st April	176,588	0	0	51,267	13	0
31st July	60,372	8	0	61,073	0	0
31st October	68,990	8	0	1,573	0	0
31st January 1829	66,986	7	0	24,371	4	8
	774,141	15	0	286,464	3	8

lbs.	oz.	dr.		r.	a.	p.		r.	a.	p.
774,141	15	0	common powder at	0	1	96	per lb.—	379,329	2	19
286,464	3	8	fine ditto at	0	1	96	ditto.—	140,367	1	86

(Signed.) P. Fearon,
Secretary to the Military Board.

Statement of the Quantity of Gunpowder manufactued in the Bombay Powder-Works during the Years 1823–24, 1824–25, 1825–26, 1826–27, 1827–28. Showing the Total Annual Amount of the Bills of Establishment, &c., &c., delivered to the Paymaster-general, viz.:—

Official years.	Total Amount of Bills delivered to the Audit Office and Military Paymaster-general.			New Gunpowder.			
				Common.	Fine.		
				100 lb. Barrels.	100 lb. Barrels.	Total. Barrels 100lbs. each.	Pounds.
	r.	a.	p.				
1823–24	42,241	3	77	2,960	555	3,515	351,500
1824–25	37,576	1	4	3,092	430	3,522	352,200
1825–26 . . , . . .	40,745	0	80	3,111	392	3,503	350,300
1826–27	36,0 :4	1	17	812½	692½	1,505	150,500
1827–28	36,106	2	37	1,009½	412½	1,422	142,200

Account Current.

Per Contra. Cr.

1826.	r.	a.	p.	r.	a.	p.
Ap. 30. By made up during the Year 1825–26.						
Axletrees, iron, Europe, completed.....	....			2,446	2	32
136 barrels, powder, 100lbs., with 4 copper hoops, each.....each	15	2	1	2,108	1	36
6081 ————————, 50lbs.....do.	12	1	75	75,632	1	75
1 basin, evaporating.....	....			45	2	15
2 beds, howitzer, heavy, 5⅘ inch. .....each	287	2	40	575	0	80
1 ——————————, light, 5⅘ do.	....			272	1	52
2 beds, mortar, ——, 13 do. .....each	610	0	0	1,220	0	0
1 ——, cheek, ——, 10 do.	....			620	2	37
1 ——, ——, ——, 8 do.	....			576	0	27
2 beds and coin, 9 pounder .....each	4	0	89	8	1	78
227 benches or forms.....do.	5	0	0	1,135	0	0
26 ————————, with arm, hospital .....do.	30	0	0	780	0	0
4 ————————, carpenter's .....do.	50	2	6	202	0	24
6 ————————, paring .....do.	31	1	44	188	0	64
2 ————————, mealing .....do.	77	2	24	155	0	48
2 bells, brass	....			703	0	0
100 beaters, hand .....each	0	2	0	50	0	0
3 binnacles, brass, patent.....	....			166	0	99

Account Current.—*Continued.*

Dr. Gun-carriage Manufactory.

1826.									
Ap. 30.	To Expenditure of Stores for the Year 1825–26.			r.	a.	p.	r.	a.	p.
	22		brushes, painting	each	0	3	7½	16	3	60
	290,425		cakes, cowdung	mil.	2	3	0	798	2	67
			4b. 22y. canvas			....		106	3	70
	1 1	15	chalk	per lb.	0	0	6⅝	2	2	62
	64,383		baskets, charcoal	per 100	23	0	0	14,808	0	36
	2 3	27½	charcoal dust			....		21	3	72
	10	11½	bushels, coal, Europe			....		644	3	33
	6 3	3	coin, loose			....		57	0	23
	20		coats camlin	each	1	2	90	34	2	40
	38	12¾	convertible			....		1,860	3	63
	295 3	7	copper, sheet	per cwt.	64	3	9	19,160	2	5
	11 18		cloth, green, fine	per yd.	9	2	13½	109	2	53
	37 27	——	coarse	do.	3	1	35	125	3	96
	14		pounds cotton	md.	6	0	0	3	0	0
	35		crucibles, black lead	each	6	1	21	220	2	35
	100		crucibles, earthen	do.	0	1	0	25	0	0
	5		sets crucibles, Europe	per set	0	3	37	4	0	85
	350		crucibles, Bussora, small	each	0	1	33⅓	116	3	25
	8cwt.	3qrs. 6lbs.	Daunner	md.	2	1	97	87	3	8
	7		yards damask, red	per yd.	3	0	0	21	0	0
	2 1	10	earth, red	per lb.	0	0	19⅗	12	3	52
	9½		pounds emery	do.	0	0	92	2	0	94
	8		corges glass panes	each	0	2	50	100	0	0
	1	17¾	glue	per lb.	0	1	1	37	1	22
	2		pairs handles, chest, brass			....		10	3	23
	30	——	——, iron	per pair	1	0	0	30	0	0
	173		pairs handles, drawers or recobs, brass	do.	0	3	63½	157	0	85
	23		hasps and staples	each	0	0	82	4	3	86
	½		hide, calf			....		1	1	77
	147		pairs hinges, butt brass	per pair	4	1	0	624	3	0
	52½	——	——, iron	do.	1	1	45½	71	2	38
	21½	——	——, chest, iron	do.	1	1	55	29	3	32
	6	——	——, brass	do.	8	0	29	48	1	74
	10,043		hoops, copper	7 ins.	1	2	46	16,223	0	12
	1600,2	46½	iron, bar	per cwt.	10	1	23	16,492	0	95
	563	——	——, pig	md.	1	0	17	2,351	1	52
	15 3	——	——, hoop			....		189	0	42
	29 1 9	——	——, old	per cwt.	7	0	0	205	1	25
	47 2¼	——	——, rod	per lb.	0	0	39¾	529	1	58
	47 2	——	——, sheet	per cwt.	13	0	59	653	1	48
	308 2 17	——	——, work, Europe, for field carriages			....		12,815	1	17
	53 6	——	——, for carronade carriages			....		2,436	0	38
	58 15½	——	—— work, old	per cwt.	27	0	86	1,586	2	45
	1		piece kharva, red			....		2	2	0
	2 1	1	lead, pig			....		41	3	17
	52		skeins, line, log	per skein	0	0	3½	39	1	73
	2 8½		linen Dangaree	per yd.	0	1	28½	182	3	52
	41		locks, bookcase, brass	each	3	0	61½	129	1	14
	3		locks, chest, brass	do.	2	1	21¾	6	3	65
	3	——	——, iron	do.	1	0	0	3	0	0
	158		locks, drawer, brass and iron			....		735	3	54
	2		locks, pad, brass	each	4	0	0	8	0	0
	1 3	22 1/16	nails, brad, iron	per lb.	0	3	17½	173	1	34
	4½		lbs. nails, burnished brass	do.	1	0	14	4	1	59
	3 2	21½	nails, copper	do.	0	3	50½	362	1	31
	32 1	5 1/16	nails, iron			....		1,394	2	78
	6 2	16½	oil, cocoa nut	per lb.	0	0	38⅗	72	0	49
	6 3	16¼	oil, Jingerly	do.	0	0	53⅓	102	3	15
	5 3	19	linseed oil	do.	0	1	56⅙	259	0	40
	3		lbs. oil, preservative			....		3	1	33
	1 1	6½	paint, black	do.	0	1	22⅘	44	2	72
	9 1	11½	paint, white	do.	0	1	12⅘	295	1	62
	11 2	27	pipe clay	do.	0	0	8	31	3	67
	45		planks, black wood	each	61	3	40	2,783	1	0
	140		planks, Calicut, 7 and 6 inch, measuring	17,979	1½		....	11,325	1	1
	463	——	——, 5 inch square, ——	15,816	6		....	6,873	3	70

Account Current.—*Continued.*

Per Contra. Cr.

1826.		r.	a.	p.	r.	a.	p.
Ap. 30.	By made up during the Year 1825–26.						
	2 blocks, chopping ..... each	30	0	0	60	0	0
	13 ——, wooden, for brass sheeves ..... do.	25	0	0	325	0	0
	18 ——, cast iron ..... do.	8	0	0	144	0	0
	5 ————, double and triple, with brass sheeves ..... each	36	0	0	180	0	0
	870 boxes, ammunition, musket ..... do.	4	0	0	3,480	0	0
	1469 ——, shot and shell ..... do.	4	1	10	6,279	3	90
	6 ——, sentry ..... do.	40	0	0	240	0	0
	1 ——, ammunition for carronade, 12-pounder ..		....		40	0	37
	5 ——, matele ..... each	3	2	0	17	2	0
	5 ——, kitt ..... do.	3	2	0	17	2	0
	5 ——, mealed powder ..... do.	3	2	50	18	0	50
	1 ——, brass		....		0	3	21
	1 ——, packing, deal wood		....		18	1	13
	2 ——, iron, with wooden boards for pressing paper		....		55	2	12
	168 bolts, eye and ring		....		652	2	45
	2 bookcases, teakwood ..... each	57	1	66	114	3	32
	20 buckets, gun ..... do.	4	2	0	90	0	0
	9 carriages, ammunition, body with limbers, 12lbs. do.	1720	0	0	10,320	0	0
	10 ————————————, 6 do. do.	1640	3	13	16,407	3	30
	2 ————————————, 5¼ inch do.	1700	0	0	3,400	0	0
	2 ————, block, field-piece, with limbers, 18-pounder .... each	2391	2	0	4,783	0	0
	6 ———————— 12 ———— ..... do.	1680	0	0	10,080	0	0
	10 ———————— 6 ———— ..... do.	1510	0	0	15,100	0	0
	1 ————, howitzer, cheek, with limbers, 8 inch.		....		2,340	0	33
	1 ————————, heavy, 5¼ inch ..... each		....		1,760	0	0
	3 ————————, light, 5¼ inch ..... do.	1680	0	0	5,040	0	0
	28 ————, carronade, with slide, 32-pounder ...		....		6,623	1	21
	1 ————————, without slide, 12-pounder ..		....		98	0	71
	6 ————————————, 18 do. ..		....		459	1	82
	2 ————, garrison————————, 32 do. ..	597	2	90	1,195	1	80
	1 ————————————, 24 do. ..		....		590	0	0
	2 ————————————, 18 do. ..	580	0	0	1,160	0	0
	1 ————————————, 9 do. ..		....		540	0	0
	12 ————, ship, ————————, 12 do. ..		....		2,137	2	87
	2 ————, travelling, with limbers, 18 do. ..	2781	3	48	5,563	2	66
	1 ————————————, 12 do. ..		....		2,629	3	8
	1 ————, transport, mortar		....		1,321	1	81
	33 carts, platform ..... each	786	3	67	25,968	1	11
	2 sling, field, with limbers ..... do.	1647	1	0	3,294	2	0
	50 chains, drag, rope, of sorts ..... do.	10	0	0	500	0	0
	35 ——, black wood ..... do.	6	0	0	210	0	0
	16 ——, teak wood ..... do.	3	0	0	48	0	0
	1 chest, laboratory, 8 inch		....		56	2	43
	1 ————————, 5¼ do.		....		52	3	60
	20 ——, clothing, hospital ..... each	44	0	40	882	0	0
	1 ——, weather		....		296	1	91
	1 ——, powder		....		7	2	88
	59 ——, arm, package, heady ..... each	7	0	0	413	0	0
	8 coins, wooden, spare, 8 inch ..... do.	1	2	0	12	0	0
	14 cots, wooden, with bolster ..... do.	12	3	96	181	3	44
	1 cot, wooden, hollow, new pattern		....		13	1	83
	1 ——, field		....		22	2	25
	2 collars, wrought iron		....		90	2	97
	19 couches, teak wood ..... each	12	0	0	228	0	0
	2 cupboards, ditto. ..... do.	181	1	7	362	2	14
	2 cushions, damask ..... do.	13	3	0	27	2	0
	1 desk, writing, with bookcase, black wood		....		458	2	44
	7 ————————————, teak-wood .... each	165	0	0	1,155	0	0
	2 ————————, without ditto ditto ..... do.	90	1	90	180	3	80
	1 ————————, minister, ditto		....		49	1	10
	1 Despence, teak		....		70	0	0
	317 doolies, hospital ..... each	30	0	0	9,510	0	0
	5 flag-staffs, with top-mast ..... do.	630	1	98	3,152	1	90

Account Current.—*Continued.*

Dr. Gun-carriage Manufactory.

1826.									
Ap. 30. To Expenditure of Stores for the Year 1825–26.		r.	a.	p.	r.	a.	p.		
3,200 planks, Calicut, of sorts, measuring 1,30,100 4		....			56,648	0	8		
75 planks, deal wood	each	5	2	0	412	2	0		
34 19 planks, heady wood	per corge	8	0	0	378	2	90		
4 corges rafters	do.	18	0	0	72	0	0		
15,659 rattans	per mill.	15	2	76	243	2	70		
14,358 rivets, copper	each	0	0	$7\frac{1}{10}$	263	3	11		
21½ rivets, iron	per lb.	0	0	90½	12	3	94		
18 2 4 rope, coir	md.	2	1	49	175	3	61		
15 2 50 rope, Europe	per cwt.	37	0	20	580	3	55		
22½ rope, cotton		....			11	1	0		
15 lbs. rosin	per lb.	0	0	37½	1	1	62		
230 cart-loads sand, casting	per cwt.	2	0	0	460	0	0		
28 screws, elevating	each	59	0	41½	1,654	3	59		
942g. 9d. 10e. iron, of sorts	per gross	1	3	6	1,664	3	8		
10½ lbs. seed, lack	per lb.	0	0	99	2	2	35		
5 sheeves lignum vitæ wood	each	2	2	0	12	2	0		
35¾ tollas, silver		....			37	2	15		
41 staves, sponge	each	0	1	8½	11	0	58		
2 stones, grinding	do.	20	3	88	41	3	76		
2 1 steel spring	per lb.	0	1	32	83	0	64		
23 9½ steel	md.	5	3	75	548	1	65		
20 summerhead, China		....			12	2	0		
12 ——————, Cudjeons		....			3	0	0		
1 1 $4\frac{1}{16}$ tacks, tin	per lb.	1	1	84	211	0	97		
1 skein tape, red		....			4	2	19		
2 21 tar, Europe		....			2	3	61		
60 2 timber, Babool	per piece	4	1	40	5,228	2	80		
80 9 ——, Bassian, measuring 1,097 1½	guz.	9	2	0	10,422	0	37		
6 8 black wood	per piece	43	0	9¾	5,507	0	37		
168 15½ black wood, Bendy	do.	91	3	48	15,505	1	43		
4 1 black wood, Calicut, 1 sort, measuring, 753 1½		....			16,259	2	44		
18 13 ————, ——, 2 sorts, measuring 676 2½	guz.	14	0	26	6,702	1	29		
4 11 ————, ——, crooked, measuring 242 3½	guz.	7	0	25	1,714	2	38		
16 4 black wood, Eynee	per piece	5	2	49	1,821	2	36		
19 7 ——————, Toolpady, measuring 302 2 1½	guz	9	2	0	2,874	1	85		
4 2 $16\frac{2}{16}$ tin	per lb.	0	1	68¾	219	1	98		
12 trucks, cast iron, for garrison carriages		....			279	3	48		
1 1 17¼ turpentine, spirits		....			85	3	95		
10 cwt. 3 12¾ tutenag		....			343	1	98		
11 lbs. twine	per lb.	1	0	64½	12	3	7		
1 19 wax, bees'	do.	0	2	61½	30	2	82		
6 pieces wax cloth	per piece	3	0	0	18	0	0		
3 24¾ wire, brass	per lb.	1	1	8½	138	0	81		
6 wire, iron	do.	0	0	92	1	1	52		
					264,613	1	30		
To Pay and Allowances.									
Established allowances		27,333	2	80					
Contingencies		123,942	0	96					
					151,275	3	76		
To made up during the Year 1825-26.								415,889	1 6
Articles completed					.....			274,595	1 97

Account Current.—*Continued.*

Per Contra. Cr.

1826.						
Ap. 30. By made up during the Year 1825–26.		r.	a.	p.	r.	a. p.
1 flag-staff, portable		....			61	0 94
20 frames, target	each	20	0	0	400	0 0
2 ———, triangular	do.	18	0	45	36	0 90
2 galleys, double, iron		....			1,948	3 95
3 gins, field	each	304	3	25	914	1 75
1 gurry, grass		....			33	2 7
729 handspikes, purchasing	each	4	0	0	2,916	0 0
12 ditto ditto		....			11	0 83
1385 helves for tools of sorts	each	1	0	0	1,385	0 0
26 horses, wooden	do.	10	0	0	260	0 0
2010 ——, magazine	do.		2	0	1,005	0 0
771 . 6 iron work, cast		....			2,276	2 15
114 kegs, grease	each	5	2	9	629	2 26
30 ladders, scaling, joints	do.	48	1	44	1,450	3 20
20 linstocks, wooden, with lock complete	do.	8	1	86	169	1 20
12 mallets, black wood	do.	4	1	0	51	0 0
2 ———, large	do.	11	0	85	22	1 70
1 maulelet, iron		....			373	0 34
220 models, in brass, for iron work		....			76	0 0
7 moulds, brass, musket-ball	each	22	0	0	154	0 0
1 ———, bullet, brass		....			5	0 82
14 ———, portable, ditto	each	35	1	25	494	1 50
4 ———, rocket, ditto	do.	20	0	0	80	0 0
1 music-stand		....			216	0 0
64 pickets, park	each	12	0	0	768	0 0
50 pairs, spare, for limber	do.	2	0	0	100	0 0
1 platform, garrison		....			520	0 0
3 ———, mortar	each	270	0	0	810	0 0
3 ———, traversing	do.	350	0	0	1,050	0 0
1 plate, cast iron		....			3	2 94
36 ditto ditto		....			453	1 95
2 ————————, with 5 rollers		....			18	2 13
27 poles, limber, spare	each	19	3	70$\frac{4}{7}$	538	0 0
5 presses, hospital, large, with drivers	do.	201	2	19	1,007	2 95
3 ———, paper, teak-wood	do.	143	3	79	404	3 37
1 ————————, on stand		....			132	0 25
3 ———, wooden, for pressing paper		....			643	2 35
20 raeks, clothing	each	45	0	0	900	0 0
50 rollers, cast iron, small		....			12	3 32
3 ditto		....			45	2 74
1 ditto, with 2 springs		....			40	2 36
30 scales, tangent	each	6	0	0	180	0 0
1 scraper, cast iron		....			12	1 89
1 ———, wrought iron		....			15	1 32
40 scuttles, brass, complete		....			845	2 40
14 shafts, spare	each	19	1	2	269	2 28
10 sockets, iron		....			379	0 85
50 spokes, teak		....			195	3 50
50 spikes, marline	each	3	0	0	150	0 0
6 standard sizes	do.	15	0	0	90	0 0
637 staves, rocket	do.	1	0	0	637	0 0
51 sticks, ditto	do.	10	0	0	510	0 0
3 ——, Gugging black wood	do.	21	0	0	63	0 0
2 stools, teak wood	do.	8	3	88	17	3 76
1 ——, kneeling		....			4	3 25
50 sockets, rockets, for stick		....			428	3 67
10 tables, camp, teak	each	30	0	0	390	0 0
1 ———, desk, drawing, teak		....			169	0 77
1 ———, folding		....			45	0 0
4 ———, laboratory	each	29	0	0	116	0 0
181 ———, mess	do.	15	0	0	2,715	0 0
3 ———, writing, with a slope and fine cloth and locks, black wood	each	300	0	0	900	0 0
1 ————————————, teak	do.	....			233	3 25

Account Current.—*Continued.*

Dr.	Per Contra.				Cr.		
Brought forward r. a. p. 893,152 3 2	1826. Ap.30. By made up during the Year 1825-26.	r.	a.	p.	r.	a.	p.
	18 traps, rat ..... each	10	0	0	180	0	0
	6 triangles, flogging ..... do.	15	1	94	92	3	64
	2 ———, weighing ..... do.	42	0	54	84	1	8
	100 tressels, spare, for cott ..... do.	2	0	0	200	0	0
	2 trunks, wooden, for bullocks .. each	50	0	60	100	1	20
	1 tumbril, treasure	....			1,337	1	60
	8 tubs, match	....			32	1	49
	390 yokes, double ..... each	10	0	0	3,900	0	0
	Sundry trifling Articles, viz.						
	1 anvil, with steel face and cutter	....					
	1 roller, iron	....					
	4 crucibles, iron	....					
	2 gravers, steel, with wooden handles.	....			121	1	50
	4 ladles, iron	....					
	1 mortar, cast iron	....					
	12 gads or wedges, iron	....					
	2 screws, female	....					
	Made up and Repaired for the Lithographic Department.						
	Made up.						
	6 springs, steel	....					
	5 handles, iron	....					
	5 scraper cases, cast iron, with screws	....					
	6 dozen pins, steel	....					
	2 screws, iron, spare	....					
	2 bars, iron	....					
	1 ditto, cross	....					
	26 pounds iron, wrought	....			295	0	34
	Repaired.						
	1 scraper case	....					
	1 trome iron	....					
	5 springs, steel	....					
	1 cross bar, iron	....					
	2 handles, iron	....					
	10 presses, lithographic	....					274,595 1 97
	By Supplies during the Year 1825-26.						
	To the Commissary of Stores.						
	136 barrels, powder, 100 pounds, with 4 copper hoops each ..... each	15	2	1	2,108	1	36
	6081 ditto ditto 50 pounds, do.	11	1	75	75,632	1	75
	2 beds, howitzer, heavy, 5¼ inch ... do.	287	2	40	575	0	80
	1 ————, light, 5¼ do.	....			272	1	52
	2 beds, mortar, ——, 13 do. ... each	610	0	0	1,220	0	0
	1 —— cheek, ——, 10 do.	....			620	2	37
	1 ————, 8 do.	....			576	0	27
	2 —— and coin, wooden, spare, 9 pounder	....			8	1	78
	4 benches, carpenter's ..... each	50	2	6	202	0	24
	6 ———, paring	33	3	60	203	1	60
	2 ———, mealing ..... each	77	2	24	155	0	48
	1 bell, brass	....			187	1	64
	100 beaters, wooden ..... each	2	0	0	50	0	0
	13 blocks, wooden, with brass sheeves do.	25	0	0	325	0	0
	5 ——, iron, double and treble, with brass sheeves ..... each	36	0	0	180	0	0
	915 boxes, ammunition, musket	....			3,606	1	12
	1469 ——, shot and shell, of sorts ...	4	1	90	6,279	3	90
	1 ——, ammunition for carronade	....			40	0	73
	5 ——, match ..... each	3	2	0	17	2	0
	5 ——, kitt ..... do.	3	2	0	17	2	0
	5 ——, mealed, powder ..... do.	3	2	50	18	0	50
	20 buckets, gun ..... do.	4	2	0	90	0	0
	6 carriages, ammunition body, with limbers, 12 pounder ..... each	1720	0	0	10,320	0	0

Account Current.—*Continued.*

Dr.	Per Contra.				Cr.		
Brought forward	1826.						
r. a. p.	Ap.30. By Supplies during the Year 1825-26.						
893,152 3 2	*To the Commissary of Stores.*						
	10 carriages, ammunition body, with limbers, 6 pounder....each	r.	a.	p.	r.	a.	p.
		1640	3	13	16,407	3	30
	2 —— ditto, howitzer, 5½ inch ..do.	1700	0	0	3,400	0	0
	2 ——, block field piece, with limbers, 18 pounder ...each	2391	2	0	4,783	0	0
	6 ——, 12 pounder.do.	1680	0	0	10,080	0	0
	10 ——, 6 ditto ..do.	1510	0	0	15,100	0	0
	1 ——, howitzer, heavy, 5½ in.	....			1,760	0	0
	3 ——, light, 5½ do.each	1680	0	0	5,040	0	0
	28 carriages, carronade, with slides, 32 pounder	....			6,623	1	21
	1 ——,without do. 12 pounder	....			98	0	71
	6 ——, with iron trucks, 18 do.	....			459	1	82
	1 carriage cheek, howitzer, with limber, 8 pounder	....			2,340	0	33
	2 carriages, garrison, 32 pounder.each	597	2	90	1,195	1	80
	1 ——, 24 ditto	....			590	0	0
	2 ——, 18 ditto ....each	580	0	0	1,160	0	0
	1 ——, 9 ditto	....			540	0	0
	8 ——, ship, 12 ditto	....			1,380	0	85
	2 ——, travelling, with limber, 18 pounder.....each	2781	3	11	5,563	2	22
	1 ——, 12 ditto	....			2,629	3	8
	1 ——, transporting mortar	....			1,300	3	79
	33 carts, platform .....each	786	3	67	25,968	1	11
	2 ——, sling, field, with limbers ..do.	1647	1	0	3,294	2	0
	40 pairs drag-ropes, of sorts.....do.	10	0	0	400	0	0
	6 chairs, black wood .....do.	6	0	0	36	0	0
	1 chest, laboratory, 8 inch.....	....			56	2	43
	1 ——, 5½ ditto	....			52	3	60
	1 chest, weather.....	....			296	1	91
	1 ——, powder	....			7	2	88
	59 ——, arm, package .....each	7	0	0	413	0	0
	8 coins, wooden, spare	....			12	0	0
	1 cupboard, teak	....			181	1	7
	317 doolies, hospital .....each	30	0	0	9,510	0	0
	5 flag-staffs, with top-mast .....do.	630	1	98	3,152	1	90
	1 ——, portable	....			61	0	94
	3 gins, field .....each	304	3	25	914	1	75
	1 gurry, brass	....			33	2	7
	676 handspikes, purchasing ....each	4	0	0	2,704	0	0
	1384 helves for tools, of sorts ....do.	1	0	0	1,384	0	0
	2010 horses, wooden, magazine ..do.	2	0		1,005	0	0
	114 kegs, grease .....do.	5	2	9	629	2	26
	30 ladders, scaling, joints.....do.	48	1	44	1,450	3	20
	20 linstocks, with iron cocks .....do.	8	1	86	169	1	20
	2 mallets, wooden .....do.	11	0	85	22	1	70
	1 mantelet, iron.....	....			373	0	34
	7 moulds, brass, musket-ball ....each	22	0	0	154	0	0
	1 ——, bullet, brass	....			5	0	82
	13 ——, portfire, ditto .....each	35	1	25	459	0	25
	4 ——, rocket, ditto .....do.	20	0	0	80	0	0
	1 music-stand.....	....			216	0	68
	64 pickets, park .....each	12	0	0	768	0	0
	50 pins, spare, for limber .....do.	2	0	0	100	0	0
	1 platform, garrison	....			520	0	0
	3 ——, mortar .....each	270	0	0	810	0	0
	3 ——, traversing.....do.	350	0	0	1,050	0	0
	27 poles, spare .....do.	19	3	71	538	0	17
	30 scales, tangent .....do.	6	0	0	180	0	0
	1 screw, elevating	....			59	0	41
	14 shafts, spare .....each	19	1	2	269	2	29
	50 spokes, teak	....			195	3	50
	50 spikes, mortar .....each	3	0	0	150	0	0

Account Current.—*Continued.*

Dr.	Per Contra.				Cr.		
Brought forward	1826.						
r. a. p.	Ap.30. By Supplies during the Year 1825-26.						
893.152 3 2	*To the Commissary of Stores.*	r.	a.	p.	r.	a.	p.
	600 staves, rocket .....each	1	0	0	600	0	0
	51 sticks, ditto .....do.	10	0	0	510	0	0
	51 socket, ditto	....			428	3	67
	4 tables, laboratory .....each	29	0	0	116	0	0
	1 triangle, weighing	....			42	0	54
	1 tumbril, common treasure	....			1,337	1	60
	8 tubs, match.....	....			32	1	49
	380 yokes, double .....each	10	0	0	3,300	0	0
	7 carriages, muster, Europe	....			3,297	1	16
					250,505	2	11
	Repaired.						
	Carts and carriages	....			19,189	2	11
	Carriages, ship, of sorts.....	....			3,077	2	44
	Barrels, powder, of sorts	....			3,030	2	65
							275,803 1 31
	To the Commissary-general.						
	1 basin, evaporating.....	....			45	2	15
	227 benches or forms.....each	5	0	0	1,135	0	0
	26 ————, with arm, hospital.do.	30	0	0	780	0	0
	2 blocks, chopping .....do.	30	0	0	60	0	0
	6 boxes, sentry .....do.	40	0	0	240	0	0
	2 bookcases, teak wood .....do.	57	1	66	114	3	32
	29 chairs, black wood .....do.	6	0	0	174	0	0
	16 ——, teak wood .....do.	3	0	0	48	0	0
	20 chests, clothing, hospital .....do.	44	0	40	882	0	0
	14 cotts, wooden, with bolster ....do.	12	3	96	181	3	44
	1 ——, field .....do.	....			22	2	25
	19 couches, teak wood .....do.	12	0	0	228	0	0
	1 cupboard, ditto	....			181	1	7
	2 cushions, damask	....			27	2	0
	1 desk, writing, with book case, black wood	....			458	2	44
	7 ————————, teak wood ..each	165	0	0	1,155	0	0
	2 ————————, without book-case, teak wood .....each	90	1	90	180	3	80
	1 ————————, minister	....			49	1	10
	1 Despence, teak wood	....			70	0	0
	20 frames, target.....each	20	0	0	400	0	0
	2 ————, triangular .....do.	18	0	45	36	0	90
	26 horses, wooden, large .....do.	10	0	0	260	0	0
	12 mallets, black wood.....do.	41	0	0	51	0	0
	5 presses, hospital .....do.	201	2	19	1,007	2	95
	3 ————, paper .....do.	134	3	79	404	3	37
	1 ————————, on stand	....			132	0	25
	20 racks, clothing.....do.	45	0	0	900	0	0
	10 sockets, iron.....	....			370	0	85
	6 standard size .....each	15	0	0	90	0	0
	3 sticks, Gugging black wood ....do.	21	0	0	63	0	0
	2 stools, teak	....			17	3	76
	1 ——, minister	....			4	3	25
	10 tables, camp, teak .....do.	30	0	0	300	0	0
	1 table or desk, drawer, teak.....	....			169	0	77
	1 ————————, folding	....			45	0	0
	165 ————————, mess .....each	15	0	0	2,475	0	0
	3 ————————, writing, with slope, black wood .....each	300	0	0	900	0	0
	1 ————————————, teak wood	....			233	3	25
	18 traps, rat .....each	10	0	0	180	0	0
	6 triangles, flogging .....do.	15	1	94	92	3	64
	100 tressels, spare, for cott .....do.	2	0	0	200	0	0
	2 trunks, wooden, bullock.....	....			100	1	20

Account Current.—*Continued.*

Dr.	Per Contra.				Cr.		
Brought forward	1826.						
r. a. p.	Ap.30. By Supplies during the Year 1825-26.						
893,152 3 2	*For the Church at Tannah.*	r.	a.	p.	r.	a.	p.
	1 bell, brass, complete	....			515	2	86
	For Assay-master.						
	1 plate, cast iron.....	....			3	2	94
	Repaired.						
	Boxes, sentry.....	394	1	10	14,996	3	6
	Fire engine	11	1	65			
					405	2	75
							15,402 1 81
	To the Marine Storekeeper.						
	3 binnacles, lamp	....			116	0	99
	168 bolts, eye and ring	....			652	2	45
	4 carriages, ship, 12 pounder.....	....			757	2	1
	2 galleys, double, iron	....			1,948	3	95
	2 plates, iron	....			18	2	13
	46cwt. 1qr. 6lbs. iron work, cast	....			1,309	2	91
	36 plates, cast and wrought iron	....			453	1	95
	1 triangle, weighing	....			42	0	54
	50 rollers, cast iron, small.....	....			12	3	32
	3 ditto	....			45	2	74
	40 scuttles, brass, complete	....			845	2	40
	Repaired.						
	4 boilers	10	3	49	6,253	1	39
	3 beams, scale, iron	18	1	89			
					29	1	38
							6,282 2 77
	To the Superintending Engineer.						
	5cwt. 3qrs. 10lbs. iron work, cast....	....			271	1	60
	18 blocks, cast iron.....each	9	0	0	162	0	0
	2 collars, wrought iron	....			90	2	97
							524 0 57
	To the Secretary of the Military Board.						
	0 2 20 brass work containing models, iron work	....			76	0	0
	1 box for packing the above	....			18	1	13
							94 1 13
	To the Superintending of Government Lithographic Department.						
	2 boxes, iron, with wooden board, for pressing paper	....			55	2	12
	3 presses for pressing paper	....			643	2	35
	6 springs, steel	....					
	5 handles, iron	....					
	5 scrapers, cast iron, with screws	....					
	26 pounds iron work, wrought	....					
	6 dozen pins, steel.....	....					
	2 screws, iron, spare	....					
	2 bars.....	....					
	1 cross bar, iron.....	....			295	0	34
	Repaired.						
	1 scraper-case	....					
	1 frame, iron	....					
	5 springs, steel.....	....					
	1 cross bar, iron.....	....					
	2 handles, iron.....	....					
	10 presses, lithographic.....	....					
							994 0 81
	To the Secretary of the Native School Book Society.						
	1 roller, with 2 springs	....			40	2	36
	1 scraper-case, cast iron.....	....			12	1	89
	1 ————, wooden	....			15	1	32
	1 spring, steel, with 2 springs and 2 scrapers, repaired	....			5	1	16
					73	2	73

Account Current.—*Continued.*

Dr.	Per Contra.			Cr.
Brought forward r. a. p. 893,152 3 2	1826. Ap. 30. By Supplies during the Year 1825-26.			
	Repaired.	r. a. p.	r. a. p.	r. a. p.
	2 lithographic presses	41 0 79		
	Iron work for ditto	9 1 40		
			50 2 19	
				124 0 92
	To the New Mint.			
	12 handspikes, purchasing	....	11 0 83	
				11 0 83
	To Messrs. Forbes and Co.			
	7 3 4 iron work, cast	....	199 1 59	
	1 grating, iron	....	59 2 17	
				258 3 76
	To Messrs. Leckie and Co.			
	8 1 26 iron work, cast	....	146 3 50	
				146 3 50
	To the Agent of Immaum of Muskat.			
	8 1 16 iron work, cast	....	349 0 55	
				349 0 55
	To the Commissary-general for the Statistical Reporter.			
	1 anvil, with steel face and cutter 1 bottle, iron 4 crucibles, iron 2 gravers, steel, with wooden handles 4 ladles, iron 1 mortar, cast iron 12 gads or wedges, iron, with steel point 2 screws, female		121 1 50	
				121 1 50
	To the Government of Fort William.			
	75 cheeks, wrought hole 69 ———, half		....	7,190 0 11
	By Repairs.			
	Repairing department,—tools, &c.		3,186 1 50	
	Erecting air furnace		2,269 0 9	
	Repairing model-rooms and pressers		673 1 23	
				6,128 2 82
	By unserviceable condemned.			
	4 blocks, train		348 0 0	
	60 baskets, fire		150 0 0	
	40 ———, forage		120 0 0	
	933 10 plank, teak		168 2 0	
	91 3 2 timber, teak		1,490 3 10	
	40 cheeks, block, carriage		1,000 0 0	
	4 bottoms, wooden		2 0 0	
	4 wheels, brass-naved, 18 pounder		1,181 0 28	
	1 wheel, platform, cart		83 3 31	
	13 naves, brass		780 0 0	
	1535 fellies, teak		6,519 0 51	
	240 fellies, Bendy		240 0 0	
	536 spokes		1,993 3 79	
				14,027 0 99
	By Charges.			
	Pay and allowances to conductors		2,680 0 0	
	Pay to lascars and overseers		7,835 2 80	
	Office establishment		4,428 0 0	
	Department expenses		3,680 0 40	
	Models		2,826 3 58	
				21,450 2 78
	By altering and fitting.			
	Charges on Europe axletrees and iron work	....	.....	12,966 0 49
	By Balance.			636,471 0 62
	Articles prepared		25,037 3 66	
	Ditto, unfinished, in hand		231,643 2 74	
				256,681 2 40
893,152 3 2			Rupees.....	893,152 3 2

Dr. Gun-carriage Manufactory. Per Contra. Cr.

		r.	a.	p.	r.	a.	p.
1825.							
May. 1.	To Balance, viz.						
	Articles prepared for Supply and Department use	29,032	1	61			
	Ditto, unfinished, in hand	173,635	2	38			
					202,667	3	99
1826.							
Ap. 30.	To Expenditure of Stores during the Year 1825-26	264,613	1	30			
	To Pay and Allowances.						
	Established	27,333	2	80			
	Contingencies	123,942	0	96			
		151,275	3	76			
					415,889	1	6
	To made up during the Year 1825-26.						
	Articles completed	.....			274,595	1	97
	Rupees				893,152	3	2

		r.	a.	p.	r.	a.	p.
1826.							
April.	By made up during the Year 1825-26.						
	Articles completed	.....			274,595	1	97
	By Supplies during the Year 1825-26.						
	To the Commissary of Stores	275,803	1	31			
	Commissary-general	15,523	3	31			
	Marine Department	6,282	2	77			
	Military Board's Office	94	1	13			
	Government of Fort William	7,190	0	11			
	———, Lithographic Department	994	0	81			
	Superintending Engineer	524	0	57			
	New Mint	11	0	83			
	Secretary to the Native School Society	124	0	92			
	Messrs. Forbes and Co.	258	3	76			
	Messrs. Leckie and Co.	146	3	50			
	Agent of the Emaum of Muskat	349	0	55			
					307,302	3	57
	By Repairs.						
	Department tools	3,186	1	50			
	Model rooms	673	1	23			
	Air furnace	2,269	0	9			
					6,128	2	82
	By Charges.						
	Pay and allowances to conductors	2,680	0	0			
	Pay to lascars and overseers	7,835	2	80			
	Office establishment	4,428	0	0			
	Department expenses	3,680	0	40			
	Models	2,826	3	58			
	Condemned stores	14,027	0	99			
	Charges on Europe axletrees and iron-work	12,966	0	49			
					48,444	0	26
					636,471	0	62
	By Balance, viz.						
	Articles prepared	25,037	3	66			
	——— unfinished	231,643	2	74			
					256,681	2	40
	Rupees				893,152	3	2

(Errors excepted.)

(Signed.) A. Manson,
Agent for Gun-carriages.

Bombay, 1st May, 1826.

Statement;—Exhibiting under the several heads of Timber Materials, Wrought Iron, Brass, Copper, and Workmanship, the Total Cost of each Description of Gun-carriage constructed at the Cassipore Gun-carriage Agency [1].

Carriages.	Expense of timber materials in the half-wrought state, as issued to the carriages.			Expense of iron work, including materials and workmanship, and loss in working up the iron.			Expense of brass work, including materials and workmanship, and loss in working up the brass.			Expense of copper, including materials and workmanship.			Workmanship in addition to that on iron, brass, and copper.			Total.		
	sa. r.	*a.*	*p.*	*sa. r.*	*a.*	*p.*	*sa. r.*	*a.*	*p.*	*sa. r.*	*a.*	*p.*	*sa. r.*	*a.*	*p.*	*sa. r.*	*a.*	*p.*
Field iron gun, with limber, R.P. .....24 pr.	383	9	3	665	7	5	88	13	4	0	0	0	158	0	1	1,295	14	1
Ditto ditto .....18 do.	382	4	11	640	9	0	93	6	0	0	0	0	152	2	1	1,268	6	0
Ditto Gomer howitzer .....10 inch	210	10	5	787	5	10	211	1	2	0	0	0	212	0	6	1,421	1	10
Ditto ditto ..... 8 do.	182	14	818	764	13	107	165	9	65	0	0	0	177	10	10	1,291	0	119
Garrison iron gun, no limber.....32 pr.	141	14	3	182	8	2	0	0	0	0	0	0	52	9	9	377	0	2
Ditto ditto .....24 do.	210	0	3	182	8	2	0	0	0	0	0	0	51	1	10	443	10	3
Ditto ditto .....18 do.	99	8	6	149	10	9	0	0	0	0	0	0	43	12	10	292	15	3
Ditto ditto .....12 do.	82	4	0	149	2	0	0	0	0	0	0	0	39	5	0	290	11	0
Ditto ditto ..... 9 do.	76	8	0	144	7	7	0	0	0	0	0	0	36	8	3	257	7	10
Ditto ditto ..... 6 do.	68	0	0	139	13	2	0	0	0	0	0	0	34	1	9	241	14	11
Mortar bed ..... 5⅓ inch	23	0	0	30	10	4	2	12	1	0	0	0	15	1	8	71	8	1
Field brass gun, with limber .....12 pr.	167	3	11	342	0	7	63	3	5	7	13	9	92	9	4	672	15	0
Ditto ditto ..... 9 do.	129	1	96	349	14	95	64	4	3	6	9	98	98	11	54	648	9	10·6
Ditto ditto ..... 6 do.	161	8	0	331	14	8	61	14	10	7	10	6	91	7	0	654	7	0
Ditto ditto, R.P.....24 do.	129	2	0	342	7	0	68	3	2	6	7	2	105	8	3	651	11	7
Ditto howitzer .....8 inch	306	1	0	685	11	5	85	9	6	0	0	0	152	11	6	1,230	1	5
Ditto ditto ..... 5⅓ do.	35	0	6	70	11	9	13	14	7	1	0	8	18	10	8	139	6	2
Carriage, ammunition, with limber, R.P.....	161	1	113	342	7	108	69	8	33	21	7	8	118	15	44	713	9	3
———, transport.....	408	4	11	342	0	7	52	3	2	0	0	0	105	15	6	908	8	2
Cart, artificer's, with limber.....	241	15	7¼	288	6	$0_{\frac{8}{16}}$	72	0	$1_{\frac{8}{16}}$	0	0	0	74	14	3	677	3	11·75
——, store, with limber	254	5	6	247	5	9	58	8	4	0	0	0	100	1	0	660	4	7
——, quarter-master's.....	162	3	4	102	5	4	14	4	3	0	0	0	46	11	5	325	8	4

N. B. The timbers are supplied by the Commissariat, and cut up into the half-wrought state at the Gun-carriage Agency: the trifling expense of workmanship added to the Commissariat charge, forms the expense of the timber materials in their half-wrought state. The iron, brass, and copper, are supplied from England or by the Commissariat; and the workmanship and materials used in preparing them for the carriages, including loss, forms the expense of those metals.—The last column all workmanship in addition to that on the metals.

[1] The carriages are chiefly of the manufacture of 1826-27; but to make a complete list, some carriages have been taken from 1824-25 and 1825-26.

Statement;—Exhibiting the cost of Iron, Brass, and Copper, used in the construction of Gun-carriages at Cossipoor, in 1827-28, distinguishing the several charges which compose the Total.

IRON.

Average rate of the crude iron per cwt.	Value of additional 51 lbs. of iron required to make up for loss per cwt. in forging, filing, finishing, &c.	Total rate of the quantity of crude iron required for 1 cwt. of finished iron.	Average rate per cent. measure of charcoal used per cwt. of iron.	Average ditto of sea coal ditto.	Average charge for petty stores per cwt.	Average value of tools worn out in manufacturing 1 cwt. of iron.	Cost of workmanship in forging and finishing 1 cwt. of iron.	Total per cwt.
sa.r. *a.* *p.*	*r.* *a.* *p.*	*r.* *a.* *p.*	*r.* *a.* *p.*	*r.* *a.* *p.*	*r.* *a.* *p.*	*r.* *a.* *p.*	*r.* *a.* *p.*	*sa.r.* *a.* *p.*
9 7 5	4 5 0	13 12 5	1 12 8	7 5 5	0 12 7	1 5 6	10 6 4	35 6 11

Deduct per centage of scrap iron received from the workings..... 0 7 0

Nett Sa. Rupees.....34 15 11

Recapitulation.

	sa.r.	*a.*	*p.*
The iron in its crude state, average rate per cwt.....	9	7	5
Additional iron required to make up 1 cwt. of finished iron, including wastage in forging and finishing..... 4 5 0			
Deduct cuttings and scrap received back..... 0 7 0	3	14	0
Cost of 1 cwt. of finished iron exclusive of charges and workmanship.....	13	5	5
Add.—Charcoal.....	1	12	8
Sea coal.....	7	5	5
Petty stores.....	0	12	7
	23	4	1
Tools worn out.....	1	5	6
Total.....	24	9	7
Workmanship.....	10	6	4
Total per cwt. of finished metal.....Sa. Rupees	34	15	11

BRASS.

Average rate of crude brass metal per cwt.	Value of additional 25⅜ lbs. brass metal required per cwt. to make up for loss in casting, filing, finishing, &c.	Average rate per cwt. measure of charcoal used per cwt. of wrought brass.	Average rate per cwt. of firewood used per cwt. of wrought brass.	Average charge for petty stores per cwt. of wrought brass.	Cost of workmanship in casting and finishing 1 cwt. of wrought brass.	Total per cwt.
r. *a.* *p.*	*r.* *a.* *p.*	*r.* *a.* *p.*	*r.* *a.* *p.*	*r.* *a.* *p.*	*r.* *a.* *p.*	*sa.r.* *a.* *p.*
44 8 0	10 1 0	1 14 9	0 14 3	0 12 5	3 3 6	61 5 11

Add.—Proportion of the high-priced serviceable brass works of preceding years issued in this, the rate being incorporated into and averaged with the price of the brass work of the present year..... 1 8 0

Nett Sa. Rupees.....62 13 11

The average per cwt. of the brass metal in its crude state.....	44	8	0
Additional brass metal required to make up 1 cwt. of finished brass, including wastage in forging and finishing.....	10	1	0
Cost of 1 cwt. of finished brass, exclusive of charges and workmanship.....	54	9	0
Charcoal.....	1	14	9
Firewood.....	0	14	3
Petty stores.....	0	12	5
	58	2	5
Workmanship.....	3	3	6
Sa. Rupees.....	61	5	11
Add.—Proportion for the high-priced serviceable brass works of preceding years, incorporated into and averaged with the rate of this.....	1	8	0
Total per cwt. of finished metal.....Sa. Rupees	62	13	11

Statement exhibiting the cost of Iron, &c.—*Continued.*

COPPER.

Rate of crude metal per cwt.	Quantity of charcoal to each cwt. of copper.	Rate of workmanship per cwt.	Different on original and conversion rate of cutting.	Total.
sa. r. a. p.	*r. a. p.*	*r. a. p.*	*r. a. p.*	*r. a. p.*
88 13 0	5 4 0	1 8 2	11 12 0	107 5 2

Recapitulation.

Value of crude metal per cwt.	88 13 0
Charcoal	5 4 0
	94 1 0
Workmanship	1 8 2
	95 9 2
Difference between the actual and conversion rate of cuttings	11 12 0
Total	107 5 2

Statement;—Exhibiting the quantity of Crude Metal required in addition to make up each cwt. of Wrought Metal, together with the quantity of Charcoal, Sea Coal, and Firewood expended in forging, finishing, &c. each cwt. of metal at Cossipore Gun-carriage Agency in 1827-28.

Metal.	Quantity of additional metal required per cwt. to make up for loss in forging, &c.	Quantity of charcoal expended on each cwt. of wrought metal.	Quantity of sea coal expended on each cwt. of wrought iron.	Quantity of firewood expended on each cwt. of wrought metal.
	lb.	*c. q. lb.*	*c. q. lb.*	*c. q. lb.*
Iron	51 [1]	1 3 0	5 0 10	None.
Brass	25¼	2 0 4	None.	2 1 15
Copper	None [2].	5 2 0	None.	None.

[1] The circumstance of most of the heavy iron, as axletrees, &c., used in the construction of the carriages in 1827-28, being of Europe manufacture, altered in the Agency, has thrown an undue proportion of loss on the small works, which would have been much less had the axletrees, &c., been forged in the Agency.

[2] In copper there is little or no wastage, the cuttings being received back as serviceable metal.

Statement;—Exhibiting the cost of Elevating-screws, together with the Rate of the Wrought Iron and Brass, and the charge of Workmanship per cwt. at the Cossipore Agency, in the Year 1827–28.

Elevating-screws for	Total cost of each kind of elevating-screw.	Cost per cwt. for		Cost of workmanship on each cwt. of	
		Iron, including all charges except workmanship.	Brass, including all charges except workmanship.	Iron for elevating-screws in a finished state.	Brass for elevating-screws in a finished state.
pr.					
Field-carriage iron gun 24	19 5 7 26				
Ditto, ditto.. 18	19 5 7 26				
Ditto, brass, R.P. 12	26 11 10 0				
Ditto, ditto 6	26 11 10 0				
Ditto, howitzer .. 8 in.	19 5 7 0	24 9 7 $8\frac{1}{20}$	58 2 $5\frac{3}{20}$	37 12 $10\frac{3}{20}$	4 13 $7\frac{1}{20}$
Ditto, ditto..... $5\frac{1}{2}$ do.	26 11 10 0				
Mortar bed..... 10 do.	19 5 7 0				
Ditto, ... 8 do.	19 5 7 0				
Ditto, ... $5\frac{1}{2}$ do.	8 0 3 0				

Statement;—Exhibiting under the heads of Timber Materials, Metal, Petty Stores, and Workmanship, the cost of constructing Powder-barrels at Cossipore, in 1827–28.

For 1 barrel of 100 lbs. capacity with 4 copper hoops.	Timber materials.		Metal.		Petty stores.	Workmanship.	Total.
	Staves.	Heads.	Copper hoops.	Rivet and nails.	Propⁿ for each barrel.	Propⁿ for each barrel.	Cost of each barrel.
	r. a. p.	r. a. p.	r. a. p.	r. a. p.	r. a. p.	r. a. p.	r. a. p.
	1 14 8	0 15 4	4 15 3	0 1 0	0 4 11	0 8 0	8 11 2

Major
Official Secretary and Accountant, Military Board.

Statement;—Exhibiting the Quantity and Rate per Barrel of the Gunpowder manufactured at Ishapore in 1824–25, 1825–26, 1826–27.

Years.	Number of barrels, 100 lbs. in each.	Rate per barrel.
1824–25.	8172	17 6 $3\frac{3}{16}$
1825–26.	7941	17 12 $1\frac{5}{16}$
1826–27.	7989	17 3 10
1827–28.	517	16 5 $6\frac{6}{16}$

Statement;—Exhibiting the Sums of Money which have been disbursed by the Agent for Gun-carriages, Gunpowder and Rockets, and Superintendent of the Foundry, in 1826–27, 1827–28, and 1828–29.

Years.	Cossipore abolished.	Fully Ghur.	Ishapore suspended.	Suspended, Allahabad Gunpowder Agency.	Abolished, Allahabad War-rocket manufactory.	Foundry.
1826–27.	720,21 0 5	63,037 6 0 13	59,273 9 0	45,593 12 4 5	17,453 4 6	[2] 25,087 0 4
1827–28.	71,625 6 6	45,672 1 4	37,683 15 4	38,269 6 7 4	[1] 9,028 9 11	28,165 14 4
1828–29.	68,968 13 0	40,011 5 7	20,037 5 2	13,568 5 1	None.	28,067 10 10
Total Sa. Rs.	212,615 3 11	148,770 12 11 13	116,994 13 6	97,431 8 0 9	26,481 14 5 0	81,320 9 6
Average. . . .	70,871 11 11 67	49,590 4 3 71	38,998 4 6	32,477 2 8 3	13,240 15 2 5	27,106 13 10

[1] For 9 months only, the W.R.M. having been suspended on the 1st May 1828.
[2] The cash accounts of the Foundry not extending further than June 1826, the total of the year of 1826-27 is to be understood as for 11 months only.

Statement of the Establishments of the Commissariat Department as they stood on the 1st December 1827, and 1st October 1830; showing the Increases and Reductions within these periods, and the prospective Saving ordered as vacancies occur.

Commissary-general's Office.

As it stood on the 1st December 1827.				As it stood on the 1st October 1830.				Increase between 1st Dec. 1827 and 1st Oct. 1830.	Red^{n} between 1st Dec. 1827 and 1st Oct. 1830.
Names of Persons.	Monthly Pay.			Names of Persons.	Monthly Pay.				
No.	r.	a.	p.	No.	r.	a.	p.		
1. John Walker	120	0	0	1. William Barnes	120	0	0		
2. Jas. Deabrew	120	0	0	2. Jas. Deabrew	120	0	0		
3. Hurrychund Ragoonathjee	50	0	0	3. Gunput Cassinathjee	50	0	0		
4. Constancio X. Francisco	35	0	0	4. Constancio X. Francisco	35	0	0		
5. Soonder Naronjee	30	0	0	5. Soonder Naronjee	35	0	0		
6. Appa Succojee	30	0	0	6. Appa Succojee	30	0	0		
7. Janardun Baboojee	30	0	0	7. Govinda Balcrustjee	20	0	0		
8. Govindrow Succojee	30	0	0	8. Govindrow Succojee	30	0	0		
9. John Thompson	80	0	0	9. John Thompson	30	0	0		
10. Alfred Tumber	30	0	0	10. Thomas Wright	30	0	0		
11. Ballajee Sadasewjee	20	0	0	11. Ballajee Sadasewjee	20	0	0		
12. Sadoba Ballajee	20	0	0	12. Pandoorung Dirmanathjee	20	0	0		
13. Ballajee Govindjee	20	0	0	13. Ballajee Govindjee	20	0	0		
14. Puttoba Nillajee	15	0	0	14. Puttoba Nillajee	15	0	0		
15. Bappoo Ballajee	15	0	0	15. Bappoo Ballajee	20	0	0		
16. Ramchunder Juggonnathjee	15	0	0	16. Ramchunder Juggonnathjee	15	0	0		
17. Soonder Bappoojee	15	0	0	17. Soonder Bappoojee	15	0	0		
18. Narrayen Soonderjee	15	0	0	18. Narrayen Soonderjee	15	0	0		
1 Havildar	12	0	0	1 Havildar	12	0	0		
5 Peons, at 6 rupees each	30	0	0	5 Peons, at 6 rupees each	30	0	0		
Office rent	200	0	0	Office rent	200	0	0		
Stationery	90	0	0	Stationery	90	0	0	.....	200 0 0

Presidency Division.

Carriage of the Sick.—Pioneer Battalion.				*Carriage of the Sick.—Pioneer Battalion.*					
24 Dooley bearers, at 8 rs. each	168	0	0	30 Dooley bearers	180	0	0		
				6 Dooley bearers attached to the European taken ill whilst on garrison duty	42	0	0	54 0 0	
Tannah.									
6 Dooley bearers at 8 rs. each	48	0	0	.....	.....			.....	48 0 0
Dapoolie.—Vingorla.									
12 Dooley bearers, 9 rs. each	108	0	0						
Rajapoor.				.....	.....			.....	1,322 0 0
1 First muccadum	20	0	0						
5 Second ditto, at 12 rs. each	60	0	0						
126 Dooley bearers, at 9 rupees	1,134	0	0						
Belgaum.—Attached to the 1st Bombay European Regiment.				*Belgaum.—Attached to a wing of His Majesty's 40th Reg.*					
2 First muccadums, at 20 rs.	40	0	0	1 Head muccadum	14	0	0	.....	1,372 0 0
9 Second muccadums, at 12 rs.	108	0	0	5 Second muccadums	40	0	0		
122 Dooley bearers, at 9 rs.	1,098	0	0	120 Dooley bearers	720	0	0		
Attached to the light wing of the 22nd Regiment N. I.									
1 Second muccadum	12	0	0	.....	.....			.....	228 0 0
24 Dooley bearers	216	0	0						
Cattle Department.				*Cattle Department.*					
26 Bamboo coolies	182	0	0	19 Bamboo Coolies, 6 rs. each	114	0	0		
26 Pack bullocks	104	0	0	38 Pack bullocks, at 4 ditto	152	0	0		

Prospective saving ordered as vacancies occur,—rupees 128.

Statement of the Establishments, &c.

Presidency Division.—Continued.

As it stood on the 1st December 1827.				As it stood on the 1st October 1830.			Increase between 1st Dec. 1827 and 1st Oct. 1830.	Red^{n} between 1st Dec. 1827 and 1st Oct. 1830.
Names of Persons.	Monthly Pay.			Names of Persons.	Monthly Pay.			
Attached to the Public Cattle at Matoonga.								
No.	*r.*	*a.*	*p.*					
1 Subedar	20	0	0					
1 Muccadum	12	0	0					
24 Drivers	98	0	0	.....	.....		.....	297 3 80
Amount of feeding 28 public cattle	117	3	80					
Dapoolie.								
10 Pack bullocks	50	0	0					
Rajapoor.				.....	.....		.....	1,392 0 0
10 Puccalee bullocks	150	0	0					
1 Second muccadum	15	0	0					
214 Pack bullocks	1,177	0	0					
Belgaum.—Attached to the 1st Bombay European Regiment.				*Belgaum.—Attached to a wing of His Majesty's 40th Regt.*				
2 Second muccadums, at 15 rs.	30	0	0	1 Second muccadum	12	0	0	
8 Draught bullocks, at 8 do.	64	0	0	14 Drivers	84	0	0	
24 Puckaulies, ditto, at 15 do.	360	0	0	Expenses incurred for 28 camels feeding, &c.	242	3	25	
461 Pack ditto, at 5 ditto	2,305	0	0					
7 Bamboo coolies at 9 ditto	63	0	0					
1 Second muccadum, at 12 do.	12	0	0					
22 Medicine coolies, at 9 do.	198	0	0					
	3,032	0	0	.....	338	3	25	.....	2,693 0 75
Attached to the 22nd Regiment Native Infantry.								
60 Pack bullocks	300	0	0					
5 Puckaulie ditto	75	0	0					
1 Second mestre	15	0	0	.....	.....		.....	852 3 86
18 Camel drivers	162	0	0					
Expenses incurred for 35 camels for feeding, &c.	300	3	86					
Medical Department Commissariat Branch.—Amount of Abstract for Presidency.				*Medical Department Commissariat Branch.—Amount of Abstract for Presidency.*				
European general hospital	338	0	0	European general hospital	288	2	0	.....	50 0 0
Ditto 2nd Bombay European regiment	472	0	0	Proceed to Deesa	.....			.....	472 0 0
Ditto 2nd battalion artillery	199	2	80	Proceed to Ahmednuggur	.....			.....	199 2 80
Ditto His Majesty's 6th regiment	526	0	0	Proceed to Poona	.....			.....	526 0 0
Ditto His Majesty's depôt	191	2	0	Amount of abstract of His Majesty's depôt	156	2	0	.....	35 0 0
				Ditto do. native gen. hospital	.....			105 0 0	
				Ditto do. ophthalmic infy.	.....			87 0 0	
Ditto Tannah garrison hospital	99	0	0	Tannah garrison hospital	87	0	0	.....	12 0 0
Ditto lunatic asylum	167	0	0	Lunatic asylum	167	0	0		
				His Majesty's 20th regiment	.....			567 0 0	
				Native garrison hospital	.....			49 2 0	
				Marine battalion	.....			52 0 0	
				1st grenadier regiment	.....			52 0 0	
				19th regiment	.....			53 0 0	
				Native invalid at Mahim	.....			12 0 0	
				Pioneer battalion	.....			31 0 0	
				Tannah native hospital	.....			26 0 0	
				Bhendy 17th regiment	.....			52 0 0	
				Dapoolie 4th regiment	.....			53 0 0	

Statement of the Establishments, &c.

Presidency Division.—Continued.

As it stood on the 1st December 1827.				As it stood on the 1st October 1830.				Increase between 1st of Dec. 1827 and 1st Oct. 1830.			Red^{n} between 1st of Dec. 1827 and 1st Oct. 1830.		
Names of Persons.	Monthly Pay			Names of Persons.	Monthly Pay.			r.	a.	p.	r.	a.	p.
	r.	a.	p.		r.	a.	p.						
				Dapoolie veteran battalion . .	.....			53	0	0			
				Garrison hospital at Rulnugury	.....			12	0	0			
				Vingorla 14th regiment	.....			52	0	0			
Office Establishment. Accountant and Cashier Department.				*Office Establishment. Accountant and Cashier Department.*									
No.				Purvoe, Shapoorjee Furdoomjee	300	0	0	100	0	0			
1 Purvoe, Sakaram Bapoojee.	200	0	0	——, Bhawoo Sadas ewjee ..	55	0	0	.....			5	0	0
2 ——, Bhawoo Sadasewjee.	60	0	0	.....	.....			.....			50	0	0
3 ——, Janardon Soonderjee.	50	0	0	Dadoba Wisswanathjee	45	0	0	5	0	0			
4 ——, Juggonath Casinathjee	40	0	0	.....	.....			.....			20	0	0
5 ——, Rowjee Balcrustnajee	20	0	0	Shroff, Luxamon Ballajee ...	30	0	0	5	0	0			
1 Shroff, Luxamon Ballajee ..	25	0	0	——, Dadajee Pandoba	15	0	0	3	0	0			
2 Dandajee Pandoba	12	0	0										
Military Supply Branch.				*Military Supply Branch.*									
				Examiner, Sadasew Wisswanatty.....	100	0	0						
1 Purvoe, Damother Vacatesh	100	0	0	.....	.....			.....			40	0	0
2 ——, Moroba Sewjee	40	0	0	Janardun Baboojee	35	0	0						
3 ——, Sakaram Pandoorung	35	0	0	Inspector, Ammernath Jaganath	30	0	0	5	0	0			
1 Inspector, Moroba Ragonatty.....	25	0	0	.....	.....			.....			15	0	0
2 ——, Naronrow Luxamonjee	15	0	0	3 Peons, at 6 rupees each. ..	18	0	0	.....			6	0	0
4 Peons, at 6 rupees each ...	24	0	0										
				Military Supply.									
				1 Purvoe, Moroba Naronjee .	70	0	0	70	0	0			
				1 ———, Moroba Sewjee...	40	0	0	40	0	0			
Provision Department.				*Provision Department.*									
1 Purvoe, Ragonath Ramjee.	70	0	0	Purvoe, Ragonath Ramjee...	80	0	0	10	0	0			
2 ——, Cassinath Kessowjee.	40	0	0	——, Cassinath Kessowjee ..	55	0	0	15	0	0			
3 ——, Luxamon Ragojee ..	20	0	0	——, Pursholum Hurjee ...	25	0	0	5	0	0			
1 Inspector	20	0	0	Inspector, Wisswanath	15	0	0	.....			5	0	0
1 Measuring man.....	18	0	0	2 Measuring men, at 12 rupees	24	0	0	6	0	0			
2 Weighing men, at 14 rupees	28	0	0	.....	.....			.....			28	0	0
2 ———————, 12 do. ..	24	0	0	.....	.....			.....			24	0	0
1 Cooper	18	0	0	1 Cooper, Rustomjee Cawasjee	15	0	0	.....			3	0	0
				1 Peon	6	0	0	6	0	0			
Medical Department.				*Medical Department.*									
1 Purvoe, Sadanund Govindjee.....	100	0	0	Purvoe, Sadanund Govindjee.....	80	0	0	.....			20	0	0
2 ——, Balcrustna Succojee.	50	0	0	.....	.....			.....			50	0	0
3 ——, Luxamon Wittoba...	40	0	0	——, Luxamon Wittoba... .	45	0	0	5	0	0			
4 ——, Ramchunder Ballajee.	25	0	0	——, Ramchunder Ballajee .	30	0	0	5	0	0			
1 Inspector Suttoo	20	0	0	——, Bapoo Naronjee	12	0	0	.....			8	0	0
1 Shroff, Sadasew Gopall....	12	0	0	.....	.....			.....			12	0	0
1 Peon	6	0	0	.....	.....			.....			6	0	0
Transport of Stores.				*Transport of Stores.*									
1 Purvoe, Balcrustna Sadasewjee	60	0	0	Balcrustna Succoja.....	55	0	0	.....			5	0	0
2 ——, Juggonnath Vencatesh	25	0	0	.....	.....			.....			25	0	0
1 Inspector, Jairam Bajee. ..	20	0	0	.....	.....			.....			20	0	0
2 ———, Sakaram Ballajee..	15	0	0	.....	.....			.....			15	0	0
2 Peons, at 6 rupees.....	12	0	0	2 Peons, at 6 rupees.....	12	0	0						
Timber Depôt.				*Timber Depôt.*									
1 Gurdar, Dinsaw Sorabjee ..	40	0	0	.....	.....			.....			40	0	0
2 ———, Ragonath Gunggee	30	0	0	.....	.....			.....			30	0	0

Statement of the Establishments, &c.

Presidency Division.—Continued.

As it stood on the 1st December 1827.				As it stood on the 1st October 1830.				Increase between 1st Dec. 1827 and 1st Oct. 1830.			Red[n] between 1st Dec. 1827 & 1st Oct. 1830.		
Names of Persons.	Monthly Pay.			Names of Persons.	Monthly Pay.								
	r.	a.	p.		r.	a.	p.	r.	a.	p.	r.	a.	p.
No.													
1 Purvoe, Damother Runsordjee	18	0	0	.....	.....			.....			18	0	0
3 Peons, at 6 rupees each	18	0	0	.....	.....			.....			18	0	0
Oil for 3 chokies	1	0	0	.....	.....			.....			1	0	0
				Cooperage.									
				1 Cooper, Bhimjee Bamonjee.	15	0	0	15	0	0			
Office Peons, &c.				*Office Peons, &c.*									
1 Naique	7	2	0	1 Naique	7	2	0						
7 Sepoys, at 6 rupees	42	0	0	4 Peons, at 6 rupees	24	0	0	.....			18	0	0
1 Sweeper	5	0	0	1 Sweeper	5	0	0						
1 Water Bramin	6	0	0	1 Water Bramin	8	0	0	2	0	0			
Stationery	59	0	0	Stationery.	120	0	0	61	0	0			
Office rent.	300	0	0	.....	.....			.....			300	0	0
Civil Department.—Supply Department.				*Civil Department.—Supply Department.*									
1 Purvoe, Gunput Cassinathjee	70	0	0	Clerk, John Walker	60	0	0	.....			10	0	0
1 Shroff, Aba Rowjee	25	0	0	.....	.....			.....			25	0	0
1 Carpenter	14	0	0	.....	.....			.....			14	0	0
Civil Supply Bills, &c.				*Civil Supply Bills, &c.*									
1 Moroba Ballajee	40	0	0	1 Moroba Ballajee	45	0	0	5	0	0			
1 Gunputrow Morojee	30	0	0	1 Andrew Seram	25	0	0	.....			5	0	0
1 Govinda Balcrustjee	25	0	0	.....	.....			.....			25	0	0
1 Anajee Balcrustjee	20	0	0	1 Inspector, Sadasew Gopal	15	0	0	.....			5	0	0
				Stationery.	28	0	0	28	0	0			
Marine Supply Bills.				*Marine Supply Bills.*									
1 Babajee Mullar.	50	0	0	.....	.....			.....			50	0	0
1 Inspector, Bhowsa Shrether.	20	0	0	.....	.....			.....			20	0	0
1 Peon	6	0	0	.....	.....			.....			6	0	0
Tannah.				*Tannah.*									
1 Clerk	30	0	0	1 Writer	30	0	0						
Stationery	15	0	0	Stationery.	15	0	0						
				1 Peon	5	0	0	5	0	0			
Dapoolie.				*Dapoolie.*									
1 Writer	45	0	0	1 Writer	45	0	0						
4 Peons, at 6 rupees each	24	0	0	4 Peons, at 5 rupees	20	0	0	.....			4	0	0
Stationery.	20	0	0	Stationery.	20	0	0						
1 Cooper	20	0	0	1 Carpenter	12	0	0	.....			8	0	0
1 Beggaree	6	0	0	1 Beggaree	6	0	0						
1 Writer at Vingorla	30	0	0	.....	.....			.....			30	0	0
1 Peon ditto.	6	0	0	.....	.....			.....			6	0	0
1 Karkoon at Ragapoor	30	0	0	.....	.....			.....			30	0	0
3 Peons at 8 rupees	24	0	0	1 Peon at Vingorla	5	0	0	.....			19	0	0
Belgaum.				*Belgaum.*									
1 Head Purvoe	50	0	0										
1 Second ditto	15	0	0										
Stationery and Light	25	0	0										
1 Karkoon	35	0	0										
1 Weighing man	17	2	0										
1 Peon	9	0	0										
1 Lascar	9	0	0										
1 Cooper	37	2	0	Changed by the Madras troops	.....			.....			395	0	0[1]
1 Peon	6	0	0										
1 Karkoon at Camp	35	0	0										
1 Cooper ditto	37	2	0										

[1] Prospective saving ordered, as vacancies occur,—rupees 30.

Statement of the Establishments, &c.

Presidency Division.—Continued.

As it stood on the 1st December 1827.		As it stood on the 1st December 1830.		Increase between 1st Dec. 1827 and 1st Oct. 1830.	Red^{n} between 1st Dec. 1827 & 1st Oct. 1830.
Names of Persons.	Monthly Pay.	Names of Persons.	Monthly Pay.		
No.	r. a. p.		r. a. p.	r. a. p.	r. a. p.
1 Weighing man at Camp. ..	17 2 0				
2 Peons, ditto.....	18 0 0				
3 Lascars, ditto	27 0 0				
4 Bamboo coolies, ditto	36 0 0				
Godown rent	20 0 0				
		Guzerat Division.			
Barrack Department.—Surat.		*Barrack Department.—Surat.*			
2 Halalkhores	12 0 0	.....	.....	.....	12 0 0
2 Massals.....	8 0 0	2 Massals.....	8 0 0		
1 Overseer	5 0 0	.....	.....	.....	5 0 0
Kaira.		*Kaira.*			
2 Beggaries' pay for Oct. 1827	10 0 0	.....	.....	.....	10 0 0
5 Puggies ditto for Sept.....	30 0 0	2 Puggies.....	8 0 0	.....	22 0 0
Baroda.		*Baroda.*			
1 Cooley	7 0 0	1 Beggary.	6 0 0	.....	1 0 0
		1 Sweeper	4 0 0	4 0 0	
Carriage of the Sick.—Surat.		*Carriage of the Sick.—Surat.*			
12 Dooley bearers	84 0 0	10 Dooley bearers.....	60 0 0	.....	24 0 0
Kaira.		*Kaira.*			
10 Dooley bearers	70 0 0	2 Second maccadums.....	16 0 0	16 0 0	
		49 Dooley bearers.....	294 0 0	224 0 0	
Rajcote.		*Rajcote.*			
1 First muccadum.	15 0 0	.....	.....	.....	15 0 0
3 Second muccadums.....	30 0 0	1 Second muccadum	8 0 0	.....	22 0 0
90 Dooley bearers	630 0 0	30 Dooley bearers	180 0 0	.....	450 0 0
Deesa.		*Deesa.*			
1 First muccadum	15 0 0	1 First muccadum	12 0 0	.....	3 0 0
5 Second ditto	45 0 0	4 Second ditto	28 0 0	.....	17 0 0
114 Dooley bearers.....	798 0 0	126 Dooley bearers.....	756 0 0	.....	42 0 0
Baroda.		*Baroda.*			
15 Dooley bearers	105 0 0	102 Dooley bearers, out of which 15 in G. H. and the rest on detachment	612 0 0	507 0 0	
Malwa Field Force.		*Malwa Field Force.*			
3 First muccadums for Nov...	45 0 0				
14 Second ditto for do....	129 0 0	.....	.....	.....	2,772 0 0
354 Dooley bearers for do..	2595 0 0				
Cutch Subᵛ Force.		*Cutch Subᵛ Force.*			
1 Head muccadum for Nov..	20 0 0	.....	.....	.....	20 0 0
5 Second ditto ditto...	60 0 0	3 Second muccadums.....	24 0 0	.....	36 0 0
119 Dooley bearers.....	1071 0 0	75 Dooley bearers.....	450 0 0	.....	624 0 0
1 Entertained from 21st Nov.	3 0 0				
Cattle Department.—Kaira.		*Cattle Department.—Kaira.*			
1 Muccadum of camel drivers	9 0 0	1 Muccadum of camel drivers	8 0 0	.....	1 0 0
11 Camel drivers.....	77 0 0	6 Camel drivers	36 0 0	.....	41 0 0
2 Sandnee Swar.....	30 0 0	.....	.....	.....	30 0 0
Feeding for 24 camels.....	176 3 23	For feeding 12 camels	46 0 57	.....	130 2 66
21 Pack bullocks.....	52 2 0	30 Pack bullocks.....	82 2 0	30 0 0	
		130 Bringary ditto	325 0 0	325 0 0	
Rajcote.		*Rajcote.*			
Feeding for 14 camels.	128 0 20	Feeding for 10 camels	25 1 42	.....	102 2 78

Statement of the Establishments, &c.

Guzerat Division.—Continued.

As it stood on the 1st December 1827.				As it stood on the 1st October 1830.				Increase between 1st Dec. 1827 and 1st Oct. 1830.			Red^{n} between 1st Dec. 1827 & 1st Oct. 1830.		
Names of Persons.	Monthly Pay.			Names of Persons.	Monthly Pay.								
No.	*r.*	*a.*	*p.*		*r.*	*a.*	*p.*	*r.*	*a.*	*p.*	*r.*	*a.*	*p.*
1 Second muccadum of camels	10	0	0	1 Muccadum	8	0	0	.....			2	0	0
7 Camel drivers	49	0	0	5 Camel drivers	30	0	0	.....			19	0	0
1 Puccaulie bullock	15	0	0	1 Puccaulie bullock	9	0	0	.....			6	0	0
1 Buggle bhestie	11	1	0	.....	.....			.....			11	1	0
1 Second muccadum of Bringary	10	0	0	.....	.....			.....			10	0	0
200 Bringary bullocks	650	0	0	20 Bringary bullocks	42	0	66	.....			607	3	34
110 Pack bullocks	160	0	0	10 Pack bullocks	33	2	0	.....			126	2	0
1 Muccadum of draft bullocks	10	0	0	.....	.....			.....			10	0	0
24 Pair of draft bullocks	480	0	0	28 Draft bullocks	238	0	0	.....			242	0	0
Deesa.				*Deesa.*									
Feeding for 24 camels	78	3	17	Feeding for 26 camels	121	2	34	42	3	17			
1 Muccadum	9	0	0	1 Muccadum	7	0	0	.....			2	0	0
12 Camel drivers	84	0	0	12 Camel drivers	72	0	0	.....			12	0	0
				2 Sandnee Sivar	20	0	0	20	0	0			
1 Muccadum Bringary bullock	9	0	0	1 Muccadum Bringary bullock	7	0	0	.....			2	0	0
200 Bullocks ditto	650	0	0	240 Bullocks, Bringary	600	0	0	.....			50	0	0
Draft Bullocks Establishment.				*Draft Bullocks Establishment.*									
1 Muccadum	9	0	0	.....	.....			.....			9	0	0
48 Bullocks, or 24 pairs	438	0	0	80 Bullocks	205	0	0	.....			227	0	0
19 Puccaulie bullocks	285	0	0	.....	.....			.....			285	0	0
51 Pack bullocks	285	0	0	.....	.....			.....			285	0	0
21 Bamboo coolies	147	0	0	.....	.....			.....			147	0	0
2 Puccaulie bullocks	30	0	0	.....	.....			.....			30	0	0
Baroda.				*Baroda.*									
3 Surat monds of mutt	1	2	54	.....	.....			.....			1	2	54
900 Bundles of hay	4	2	0	.....	.....			.....			4	2	0
50 Pack bullocks, out of which 41 bullocks with detachment at Deesa	232	0	0	59 Pack bullocks	201	2	0	.....			30	2	0
				28 Bamboo coolies at 6 rupees	208	0	0	208	0	0			
				3 Puccaulie bullocks	27	0	0	27	0	0			
2 Muccadums of draft bullocks	18	0	0	2 Muccadums of draft bullocks	14	0	0	.....			4	0	0
100 Draught bullocks	900	0	0	50 Pair of ditto	850	0	0	.....			50	0	0
2 Puckaulies bullock driver	14	0	0	.....	.....			.....			14	0	0
Malwa Field Force.—Cattle Department.—Bamboo Coolies Establishment.				*Malwa Field Force.—Cattle Department.*									
1 Second muccadum	9	0	0										
36 Bamboo coolies	252	0	0										
1 First muccadum, Bringary	15	0	0										
4 Second ditto	36	0	0										
1137 Bringary bullocks, with driver	2,842	2	0										
Camp Equipage Bullock Establishment.													
2 Second muccadums	18	0	0										
162 Regimental pack bullocks	648	0	0										
3 Second muccadums draft bullocks	27	0	0										
70 Pairs draft bullocks with drivers	1,260	0	0										
1 Second muccadum Puccaulie bullocks	9	0	0										
52 Puccaulie bullocks, out of which 46 at 10 rupees, and the rest at 13 each	538	0	0										

Statement of the Establishments, &c.

Guzerat Division.—Continued.

As it stood on the 1st December 1827.		As it stood on the 1st October 1830.		Increase between 1st Dec. 1827 and 1st. Oct. 1830.	Red^{n} between 1st Dec. 1827 & 1st Oct. 1830.
Names of Persons.	Monthly Pay.	Names of Persons.	Monthly Pay.		
No.	r. a. p.		r. a. p.	r. a. p.	r, a. p.
1 Second muccadum of public camels	9 0 0	}	.....	.....	6,419 0 75
12 Camel drivers	96 0 0				
Feeding for 24 camels	101 1 60				
Elephant Establishment.					
1 Jemedar	12 0 0				
10 Mahoots	80 0 0				
10 Mates	70 0 0				
1 Peon	5 0 0				
1 Hand bhestie	5 0 0				
For feeding of 10 elephants	335 1 27				
10 Leather buckets, with hemp rope, for watering elephant	12 2 0				
10 Pound Jingely oil for the above buckets	0 2 22				
1 Cotton rope, weighing 9lbs.	2 1 0				
Repairing bunden and bady.	1 2 0				
1 Hide, large	4 0 0				
26 Pounds mussala for sick elephant	26 0 0				
14 ——— twine, country, for repairing tools	1 0 66				
48 Earthen chitties for breaking daily br.	2 0 0				
Cutch Field Force.		*Cutch Field Force.*			
1 Second muccadum	12 0 0	.....	.....	.....	12 0 0
28 Bamboo coolies	252 0 0	.....	.....	.....	252 0 0
1 Second muccadum	12 0 0	.....	.....	.....	12 0 0
190 Bringary bullocks	665 0 0	100 Bringary bullocks	.....	.....	390 0 0
Regimental Bullocks.		*Regimental Bullocks.*			
1 Maistry	10 0 0	.....	.....	.....	10 0 0
40 Pack bullocks	1 60 0 0	40 Pack bullocks	160 0 0		
9 Camel drivers	81 0 0	.....	.....	.....	81 0 0
		7 Puccaulie bullocks	81 0 0	81 0 0	81 0 0
Hurkara Camel Driver.					
2 Camel drivers	20 0 0	.....	.....	.....	20 0 0
Feeding public and Hurkara camel	19 0 2	.....	.....	.....	19 0 2
Cavalry Department.—Kaira.		*Cavalry Department.—Kaira.*			
1 Weighing man	30 0 0	1 Metta	16 0 0	.....	14 0 0
1 Measuring man	10 0 0	1 Measuring man	12 0 0	2 0 0	
1 Beggaree	5 0 0	1 Sepoy	5 0 0		
		5 Muccadums	24 0 0	24 0 0	
Rajcote.		*Rajcote.*			
1 Metta	20 0 0	1 Metta	16 0 0	.....	4 0 0
2 Weighing men	24 0 0	1 Weighing man	12 0 0	.....	12 0 0
4 Beggarees	28 0 0	1 Peon	5 0 0	.....	23 0 0
Deesa.		*Deesa.*			
8 Muccadums	72 0 0	.....	.....	.....	72 0 0
120 Grass-cutters	840 0 0	.....	.....	.....	840 0 0
1 Metta	25 0 0	2 Mettas	28 0 0	3 0 0	
3 Weighing men	36 0 0	2 Weighing men	20 0 0	.....	16 0 0
2 Peons	14 0 0	1 Sepoy	5 0 0	.....	9 0 0
5 Beggarees	.....	.....	.....	.....	35 0 0
Allowance of stationery for the detachment at Deesa.	40 0 0	.....	.....	.....	40 0 0

Statement of the Establishments, &c.

Guzerat Division.—Continued.

As it stood on the 1st December 1827.		As it stood on the 1st October 1830.		Increase between 1st Dec. 1827 and 1st Oct. 1830.	Iteds between 1st Dec. 1827 & 1st Oct. 1830.
Names of Persons.	Monthly Pay.	Names of Persons.	Monthly Pay.		
Malwa F. Force.					
No.	r. a. p.		r. a. p.	r. a. p.	r. a. p.
12 Second muccadums	108 0 0				
3 Mheta	60 0 0				
465 Grass-cutters	3,487 0 0	.....	.....	.....	3,770 2 0
1 Metta	30 0 0				
3 Weighing men	36 0 0				
7 Beggaries	49 0 0				
Medical Department.—Kaira.		*Medical Department.—Kaira.*			
Amount of medical servants' establishment	158 0 0	Amount of medical servants' establishment	199 0 0	41 0 0	
Broach.		*Broach.*			
Amount of medical servants' establishment	68 0 0	Amount of medical servants' establishment	23 0 0	.....	45 0 0
Ditto	129 0 66	.....	.....	.....	129 0 66
Cuteh Field Force.		*Cuteh Field Force.*			
Amount of medical servants' establishment of foot artillery	88 0 0				
Ditto of 2nd Bombay European regiment	79 3 99	Bhooj establishment of medical servants	116 2 0	.....	51 1 99
		Surat.			
		Medical servants' establishment	329 0 0	329 0 0	
		Rajeote.			
		Amount of medical servants' establishment	81 2 0	81 2 0	
		Deesa.			
		Amount of medical servants' establishment	231 0 0	231 0 0	
		Baroda.			
		Amount of medical servants' establishment	173 0 0	173 0 0	
Ordnance Department.—Rajeote.		*Ordnance Department.—Rajeote.*			
2 Carpenters	45 0 0				
2 Smiths	45 0 0				
1 Hammerman	13 0 0	.....	.....	.....	112 0 0
1 Bellows boy	9 0 0				
Broach.					
2 Overseers	10 0 0	.....	.....	.....	10 0 0
Baroda, Sub. F.					
1 Mestry carpenter	15 0 0				
1 Ditto smith	12 0 0				
1 Hammerman	9 0 0	.....	.....	.....	41 0 0
1 Bellows boy	5 0 0				
		Surat.			
		1 Overseer	5 0 0	5 0 0	
Provision Department.—Surat.		*Provision Department.—Surat.*			
Rent of store rooms	60 0 0	.....	.....	.....	60 0 0
1 Cooper	15 0 0	1 Cooper	15 0 0		

Statement of the Establishments, &c.

Guzerat Division.—Continued.

As it stood on the 1st December 1827.		As it stood on the 1st October 1830.		Increase between 1st Dec. 1827 and 1st Oct. 1830.	Red^{n} between 1st Dec. 1827 & 1st Oct. 1830.
Names of Persons.	Monthly Pay.	Names of Persons.	Monthly Pay.		
No.	r. a. p.	No.	r. a. p.	r. a. p.	r. a. p.
1 Cooley	5 0 0	1 Cooley	5 0 0		
Kaira.		*Kaira.*			
1 Cooper	30 0 0	1 Cooper	20 0 0	.....	10 0 0
1 Beggaree	10 0 0	1 Beggaree	6 0 0	.....	4 0 0
1 Metta employed at Cambay	20 0 0	1 Native agent at Cambay	20 0 0		
		1 Ditto at Ahmedabad	15 0 0	15 0 0	
Rajcote.		*Rajcote.*			
1 Shroff	15 0 0	.....	.....	.....	15 0 0
1 Native agent	15 0 0	1 Native agent at Gogo	20 0 0	5 0 0	
1 Cooper	35 0 0	.....	.....	.....	35 0 0
1 Carpenter	22 2 0	.....	.....	.....	22 2 0
Broach.		*Broach.*			
Paid Lieutenant Hume his allowance for conducting Commissariat duties	60 0 0	.....	.....	.....	60 0 0
Baroda.		*Baroda.*			
1 Cooper	30 0 0	.....	.....	.....	30 0 0
2 Beggarees	14 0 0	1 Beggaree	6 0 0	.....	8 0 0
Paid Godown rent	50 0 0	Paid office and Godown rent	50 0 0		
Mhow.					
1 Cooper	70 0 0				
1 Weighing man	12 0 0				
2 Second muccadums	9 0 0				
14 Beggarees	98 0 0				
17 Wood-cutters	119 0 0	.....	.....	.....	340 0 0
Assurghur.					
1 Native writer	20 0 0				
1 Peon	5 0 0				
1 Beggaree	7 0 0				
Cutch.		*Bhooj.*			
1 Cooper's pay for Nov.	35 0 0	1 Cooper	20 0 0	.....	15 0 0
1 Metta for ditto	15 0 0	.....	.....	.....	15 0 0
1 Weighing man for ditto	15 0 0	1 Weighing man	12 0 0	.....	3 0 0
3 Peons for ditto	27 0 0	1 Peon	5 0 0	.....	22 0 0
		Deesa.			
		1 Cooper	20 0 0	20 0 0	
		1 Weighing man	10 0 0	10 0 0	
		1 Measuring man	10 0 0	10 0 0	
		2 Peons	10 0 0	10 0 0	
		Paid for water for stores during the month	7 0 0	7 0 0	
Office Establishment at Surat.		*Office Establishment at Surat.*			
1 Head clerk	130 0 0	1 Head clerk	150 0 0	20 0 0	
1 Second ditto	100 0 0	1 Second ditto	100 0 0		
1 Third ditto	90 0 0	1 Third ditto	80 0 0	.....	10 0 0
1 Fourth ditto	40 0 0	1 Fourth ditto	50 0 0	10 0 0	
		1 Fifth ditto	40 0 0	40 0 0	
		1 Sixth ditto	20 0 0	20 0 0	
		1 Seventh ditto	15 0 0	15 0 0	
		1 Shrof	15 0 0	15 0 0	
1 Naique	9 0 0	1 Naique	8 0 0	.....	1 0 0
5 Peons	25 0 0	6 Peons	30 0 0	5 0 0	
Stationery, bookbinding, &c.	45 0 0	Stationery, bookbinding, &c.	120 0 0	75 0 0	
Office rent	100 0 0	Office rent	100 0 0		

Statement of the Establishments, &c.

Guzerat Division.—Continued.

As it stood on the 1st December 1827.		As it stood on the 1st October 1830.		Increase between 1st of Dec. 1827 and 1st Oct. 1830.	Red^{n} between 1st Dec. 1827 & 1st Oct. 1830.
Names of Persons.	Monthly Pay	Names of Persons.	Monthly Pay.		
	r. a. p.		r. a. p.	r. a. p.	r. a. p.
Broach.					
No. Stationery, &c.	10 0 0	.....	.....	.....	10 0 0
Kaira.		*Kaira.*			
1 Clerk	80 0 0	1 English writer	80 0 0		
1 Ditto	50 0 0	.....	.....	.....	50 0 0
1 Native writer and keeping accounts	100 0 0	.....	.....	.....	100 0 0
1 Shroff	15 0 0	.....	.....	.....	15 0 0
3 Peons	15 0 0	2 Peons	10 0 0	.....	5 0 0
Office rent	50 0 0	.....	.....	.....	50 0 0
Stationery	20 0 0	.....	.....	.....	20 0 0
Baroda.		*Baroda.*			
1 Head clerk	150 0 0	1 English writer	75 0 0	.....	75 0 0
2 Clerks at 80 rupees each	160 0 0	.....	.....	.....	160 0 0
1 Ditto	60 0 0	.....	.....	.....	60 0 0
1 Ditto	25 0 0	.....	.....	.....	25 0 0
1 Mheta	20 0 0	.....	.....	.....	20 0 0
1 Shroff	15 0 0	.....	.....	.....	15 0 0
1 Mheta at Tankaira	14 0 0	1 Native agent at Tankaira	14 0 0		
1 Carpenter	12 0 0	.....	.....	.....	12 0 0
7 Peons	49 0 0	2 Peons	10 0 0	.....	39 0 0
Office rent	100 0 0	.....	.....	.....	100 0 0
Stationery	45 0 0	.....	.....	.....	45 0 0
		1 Native agent	60 0 0	60 0 0	
Rajeote.		*Rajeote.*			
1 Clerk	75 0 0	1 Clerk	75 0 0		
4 Peons	28 0 0	2 Peons	10 0 0	.....	18 0 0
Stationery	25 0 0	Stationery	10 0 0	.....	15 0 0
Deesa.		*Deesa.*			
1 Clerk	45 0 0	1 English writer	50 0 0	5 0 0	
		2 Peons	10 0 0	10 0 0	
		Stationery	25 0 0	25 0 0	
		Office rent	60 0 0	60 0 0	
Cutch.		*Bhooj.*			
1 Head clerk, Salamon	130 0 0	1 English writer	80 0 0	.....	50 0 0
1 Second ditto, Hurriehund	75 0 0	1 Ditto ditto	20 0 0	.....	55 0 0
1 Third ditto, Narrayen Ballajee	50 0 0	.....	.....	.....	50 0 0
Office Establishment.—Cutch.		*Office Establishment.—Bhooj.*			
1 Shroff	15 0 0	.....	.....	.....	15 0 0
1 Peon	9 0 0	1 Peon	5 0 0	.....	4 0 0
Stationery	31 3 15	Stationery	20 0 0	.....	11 3 15
		Office	60 0 0	60 0 0	
Malwa Field Force.					
1 Head clerk, Ramchundar Cassenath	150 0 0				
1 Clerk, Dadoba Hurriehundjee	80 0 0				
1 Ditto, Bhawoo ditto	50 0 0	.....	.....	.....	419 0 0[1]
1 Ditto, Dinnath Sham	40 0 0				
1 Shroff	15 0 0				
4 Peons	20 0 0				
Stationery	64 0 0				

[1] Prospective saving ordered, as vacancies occur,—rupees 148 3 80.

Statement of the Establishments, &c.

Poona Division.

As it stood on the 1st December 1827.				As it stood on the 1st October 1830.			Increase between 1st Dec. 1827 and 1st Oct. 1830.	Red^{n} between 1st Dec. 1827 & 1st Oct. 1830.
Names of Persons.	Monthly Pay.			Names of Persons.	Monthly Pay.			
No.				*Poona Division.*				
	r.	a.	p.	*Barrack Department.—Poona.*	r.	a.	p.	r. a. p.	r. a. p.
				1 Mussall.....	7	0	0	7 0 0	
Carriage of the Sick.—Poona.				*Carriage of the Sick.—Poona.*					
1 Head muccadum	15	0	0	1 Head muccadum	13	0	0	.....	2 0 0
2 Second ditto, at 9 rs. each	18	0	0	2 Second ditto	.....			.....	18 0 0
38 Dooley bearers, at 7 do...	266	0	0	20 Dooley bearers, at 6 rs. each	120	0	0	.....	146 0 0
Malligaum.				*Malligaum.*					
1 Head muccadum	15	0	0	1 Head muccadum	.....			.....	15 0 0
30 Dooley bearers, at 7 rs. each	210	0	0	18 Dooley bearers	108	0	0	.....	102 0 0[1]
Sattara.				*Sattara.*					
1 Second muccadum	9	0	0	1 Second muccadum	.....			.....	9 0 0
30 Dooley bearers, at 7 rs. each	210	0	0	9 Dooley bearers, at 6 rs. each	54	0	0	.....	156 0 0[2]
Sholapore.				*Sholapore.*					
				1 Second muccadum	9	0	0		
				33 Dooley bearers	198	0	0		
								207 0 0	
Cattle Department.—Poona.				*Cattle Department.—Poona.*					
598 Draft bullocks, at 7 rupees each	4,186	0	0	600 Draft bullocks, at 7 rupees each	4,200	0	0	.....	146 0 0
16 Ditto ditto, at 10 ditto	160	0	0						
525 Pack bullocks, at 5 ditto	2,625	0	0	250 Pack bullocks, 2¼ rs. each	625	0	0	[4]A.	1,578 0 9[5]
				Ditto, extra pay	421	3	5		
2 Head maistries, at 30 rs. each	60	0	0	3 Head muccadums, 18 rs. each	54	0	0	.....	6 0 0
16 Petty ditto, at 7 ditto....	112	0	0	13 Second ditto, at 11 ditto..	143	0	0	31 0 0	
5 Mawoots, at 7 ditto	35	0	0	2 Mawoots, at 7 ditto	14	0	0	.....	21 0 0
5 Mates, at 6 ditto	30	0	0	2 Mates, at 6 ditto.....	12	0	0	.....	18 0 0
1 Peon.....	7	0	0	1 Peon	5	0	0	.....	2 0 0
5 Elephants, expense of feeding	948	1	96	2 Elephants, expense of feeding	168	2	17	.....	779 3 79
				1 Ramvosie	6	0	0	6 0 0[3]	
1 Head muccadum of camels	20	0	0	2 Second muccadums of camels	24	0	0	.....	44 0 0
4 Second ditto of ditto, at 12 rupees each	48	0	0						
99 Camel drivers, at 7 rupees each 693 0 0									
198 Camels, average expense of feeding 2,685 2 19									
	3,378	2	49	130 Camels, hired at 13 rupees per month	1,690	0	0	.....	1,688 2 49
4 Drivers of Harcara camels, at 7 rupees each	28	0	0	7 Bamboo coolies, at 6 rs. each	42	0	0	42 0 0	
				.....	.....			.....	28 0 0
1 Second muccadum of bullocks	12	0	0	.....	.....			.....	12 0 0
26 Bullock drivers, at 7 rupees each 182 0 0									
54 Ditto, expense for feeding 564 3 90									
	746	3	90	.....	.....			.....	746 3 90
Sholapore.				*Sholapore.*					
				4 Draft bullocks, at 5 rs. each	20	0	0	20 0 0	
				75 Pack ditto, at 4 ditto	300	0	0	300 0 0	
				1 Muccadum of camels	9	0	0	9 0 0	
				1 Ditto of bullocks	9	0	0	9 0 0	

[1] Prospective saving ordered, as vacancies occur,—rupees 24.
[2] Do. rupees 18.
[3] Do. rupees 6.
[4] When these cattle are employed, the owner recieves 2¼ rupees extra per month.

Statement of the Establishments, &c.

Poona Division.—Continued.

As it stood on the 1st December 1827.				As it stood on the 1st October 1830.				Increase between 1st of Dec. 1827 and 1st Oct. 1830.			Red[n] between 1st Dec. 1827 & 1st Oct. 1850.		
Names of Persons.	Monthly Pay.			Names of Persons.	Monthly Pay.								
Malligaum.	r.	a.	p.	*Malligaum.*	r.	a.	p.	r.	a.	p.	r.	a.	p.
No.													
40 Draft bullocks, at 7 rupees each	280	0	0	.....	.....			.....			280	0	0
40 Pack ditto, at 5 ditto	200	0	0	.....	.....			.....			200	0	0
1 Second muccadum	12	0	0	.....	.....			.....			12	0	0
				Ahmednuggur.									
				1 Second muccad. of bullocks	11	0	0	11	0	0			
				25 Bullock drivers, at 5 rupees each 125 0 0									
				52 Ditto, expense for feeding 403 3 90									
					528	3	90	528	3	90			
Cavalry Department.—Poona.				*Cavalry Department.—Poona.*									
1 Native writer	25	0	0	1 Native writer	.....			.....			25	0	0
1 Measuring man	7	0	0	1 Measuring man	.....			.....			7	0	0
1 Weighing man	7	0	0	1 Weighing man	7	0	0	.....					
1 Peon	7	0	0	1 Peon	5	0	0	.....			2	0	0
2 Grass muccad. at 10 rs. each	20	0	0	4 Grass muccad. at 8 rs. each	32	0	0	12	0	0[1]			
4 Ramosies, at 7 ditto	28	0	0	8 Ramosies, at 6 rs. ditto	48	0	0	20	0	0[2]			
1 Muccadum of coolies	10	0	0	1 Muccadum of coolies	8	0	0	.....			2	0	0[3]
10 Coolies, at 7 each	70	0	0	2 Coolies, at 6 rs. each	12	0	0	.....			58	0	0
Cavalry Department.—Kirkee.				*Cavalry Department.—Kirkee.*									
1 Mheta	20	0	0	1 Mheta	17	0	0	.....			3	0	0[4]
1 Assistant ditto	10	0	0	1 Assistant ditto	.....			.....			10	0	0
1 Weighing man	7	0	0	1 Weighing man	7	0	0						
1 Measuring ditto	7	0	0	1 Measuring man	.....			.....			7	0	0
Sholapore.				*Sholapore.*									
				1 Mheta	16	0	0	16	0	0			
				1 Measuring man	12	0	0	12	0	0			
				1 Peon	5	0	0	5	0	0[5]			
				2 Coolies	12	0	0	12	0	0			
Lock Hospital.—Poona.				*Lock Hospital.—Poona.*									
				Servants attached	57	2	0	57	2	0			
				Ahmednuggur.									
				Servants attached	59	0	0	59	0	0			
				Sholapore.									
				Servants attached	32	0	0	32	0	0			
Medical Department, E. I.—Poona.				*Medical Department, E. I.—Poona.*									
Hospital servants of His Majesty's 4th light dragoons	306	0	0	Hospital servants of His Majesty's 4th light dragoons.	413	0	0						
Ditto, of His Majesty's 20th regiment	476	2	58	Ditto ditto of 2nd or Queen's Royals	519	0	0						
Ditto of 3rd foot, H.B.	81	2	0	Ditto of 6th regiment	549	0	0						
Ditto of 1st batt. artil.	188	2	0	Ditto of 1st troop, H.B.	84	2	40						
Ditto of 4th troop, H.B.	106	2	0	Ditto of 3rd troop, H.B.	85	1	20						
1 Native writer	20	0	0	1 Native writer									
1 Peon	7	0	0	1 Peon	5	0	0						
Kirkee.				*Kirkee.*									
1 Native writer	20	0	0	1 Native writer	.....			1,749	1	50	815	2	13

[1] Prospective saving ordered, as vacancies occur,—rupees 32. [2] Do. rupees 48. [3] Do. rupees 8.
[4] Do. rupees 17. [5] Do. rupees 5.

Statement of the Establishments, &c.

Poona Division.—Continued.

As it stood on the 1st December 1827.				As it stood on the 1st October 1830.				Increase between 1st Dec. 1827 and 1st Oct. 1830.			Red^{n} between 1st Dec. 1827 & 1st Oct. 1830.		
Names of Persons.	Monthly Pay.			Names of Persons.	Monthly Pay.								
	r.	a.	p.		r.	a.	p.	r.	a.	p.	r.	a.	p.
Ahmednuggur.				*Ahmednuggur.*									
				Hospital servants of the 1st, and details of the 2nd battalion artillery	339	3	90						
				Hospital servants of the English corps	44	0	0						
				1 Native writer	25	0	0						
				2 Peons, at 5 rs. each	10	0	0						
Sholapore.				*Sholapore.*									
				Hospital servants, 4th troop H. B.	67	0	0						
	1,206	0	58		2,141	3	50						
Medical Department, N. I.—Poona.				*Medical Department, N. I.—Poona.*									
				Hospital servants attached to the 11th regiment N.I. .	51	0	0						
				Hospital servants attached to the 13th regt. N. I. ...	50	0	0						
				Ditto 8 companies of pioneers	11	0	0						
				1 Peon	5	0	0						
Medical Department, N. I.—Sattara.				*Medical Department, N. I.—Sattara.*									
				Hospital servants of the 2nd gren. regt. native infantry	50	0	0						
				1 Peon	5	0	0						
Ahmednuggur.				*Ahmednuggur.*									
				Hospital servants attached to Golundauze battalion	50	0	0						
				Ditto 8th regiment N. I.	50	0	0						
				Ditto gun lascars attached to 1st battalion artillery	17	0	0	621	2	0			
				Ditto 1 company of pioneers .	11	0	0						
Malligaum.				*Malligaum.*									
				Hospital servants 6 regt. N.I.	51	0	0						
				Ditto 10th ditto	50	0	0						
				Ditto of a detachment 6th regiment N. I.....	11	0	0						
Asseerghur.				*Asseerghur.*									
				Hospital servants attached to 18th regiment, N. I.	50	0	0						
				1 Peon	5	0	0						
Sholapore.				*Sholapore.*									
				Hospital servants attached to 1st regiment light cavalry .	48	2	0						
				Ditto, 5th regiment N.I.	53	0	0						
				Ditto, ditto, 9th	53	0	0						
Office Establishment.—Poona.				*Office Establishment.—Poona.*									
				1 Head clerk, Damother Venkleeba	150	0	0	20	0	0			
1 Head clerk, Naronjee	130	0	0										
				1 Second clerk, Ramchundar Cassinath	120	0	0	120	0	0			
1 Clerk, Moroba	65	0	0	1 Clerk, Wittoba	60	0	0	.....			5	0	0
1 Ditto, Hindser	65	0	0	1 Ditto, Gozba	60	0	0	.....			5	0	0
1 Ditto, Wittoba	60	0	0	1 Ditto, Wisswanath	60	0	0						
1 Ditto, Gozba.....	60	0	0	1 Ditto, Shreecrustna	55	0	0	.....			5	0	0

Statement of the Establishments, &c.

Poona Division.—Continued.

As it stood on the 1st December 1827.				As it stood on the 1st October 1830.				Increase between 1st of Dec. 1827 and 1st Oct. 1830.			Red^{n} between 1st of Dec. 1827 and 1st Oct. 1830.		
Names of Persons.	Monthly Pay.			Names of Persons.	Monthly Pay.								
No.	r.	a.	p.	No.	r.	a.	p.	r.	a.	p.	r.	a.	p.
1 Ditto, Pyran	55	0	0	1 Ditto, T. Freta	50	0	0	.....			5	0	0
1 Ditto, Shreecrustna	50	0	0	1 Ditto, J. Knight	45	0	0	.....			5	0	0
1 Ditto, Balcrustna	30	0	0	1 Ditto, T. M. Cuddum	40	0	0	10	0	0			
1 Ditto, Ragonath	30	0	0	1 Ditto, F. Sale	35	0	0	5	0	0			
1 Ditto, Crouly	25	0	0	1 Shroff, Bapoo	15	0	0	15	0	0	25	0	0
1 Naique of peons	10	0	0	1 Naique of Peons	8	0	0	.....			2	0	0
4 Peons, at 7 rs. each	28	0	0	4 Peons, 5 each	20	0	0	.....			8	0	0
Kandiesh.				*Kandiesh.*									
1 Clerk, Moroba	35	0	0	1 Clerk, Moroba	45	0	0	10	0	0			
2 Peons, at 7 rs. each	14	0	0	2 Peons, at 5 rs. each	10	0	0	.....			4	0	0
Ahmednuggur.				*Ahmednuggur.*									
1 Native writer	20	0	0	1 Clerk	50	0	0	50	0	0	20	0	0
1 Peon	7	0	0	1 Peon	5	0	0	.....			2	0	0
Satara.				*Satara.*									
1 Native writer	20	0	0	.....	.....			.....			20	0	0
1 Peon	7	0	0	1 Peon	5	0	0	.....			2	0	0
Asseerghur.				*Asseerghur.*									
				1 Native writer	20	0	0	20	0	0			
				1 Peon	5	0	0	5	0	0			
Sholapore.				*Sholapore.*									
				1 Clerk, Moroba	55	0	0	55	0	0			
				1 Shroff	20	0	0	20	0	0			
				3 Peons, at 5 rs. each	15	0	0	15	0	0			
Provision Department.—Poona.				*Provision Department.—Poona.*									
1 Head cooper	30	0	0	1 Head cooper	30	0	0						
1 Second do.	25	0	0	1 Second do.	.....			.....			25	0	0
3 Peons at 7 rs. each	21	0	0	2 Peons, at 5 each	10	0	0	.....			11	0	0
Kirkee.				*Kirkee.*									
1 Cooper	25	0	0	1 Cooper	25	0	0						
Malligaum.				*Malligaum.*									
1 Cooper	20	0	0	1 Cooper	.....			.....			20	0	0
2 Peons, at 7 rs. each	14	0	0	2 Coolies, at 6 rs. each	12	0	0	.....			2	0	0
Ahmednuggur.				*Ahmednuggur.*									
				1 Cooper	20	0	0	20	0	0			
				1 Weighing-man	8	0	0	8	0	0[1]			
				2 Coolies	12	0	0	12	0	0[2]			
Sholapore.				*Sholapore.*									
				1 Cooper	20	0	0	20	0	0			
				1 Peon	5	0	0	5	0	0			
Civil and Insane Hospital.				*Civil and Insane Hospital.*									
				1 Peon	5	0	0	5	0	0			
Engineer Department.				*Engineer Department.*									
1 Native writer	35	0	0	1 Native writer	.....			.....			35	0	0
1 Peon	7	0	0	1 Peon	.....			.....			7	0	0
								Grand Total			8,760	0	57	39,378	1	36[3]

[1] Prospective saving ordered as vacancies occur,—rupee 1. [2] Ditto,—rupees 2.
[3] Grand Total of Prospective savings;—rupees 467 3 80.

Bombay, Commissary-general's Office,
29th November, 1830.

T

E. Frederick,
Lieutenant-Colonel Commissary-general.

Statement;—showing the Cost and Charges for Horses purchased by the Commissariat in the Gulf at Bombay, and the Subordinates, until delivered over to the Mounted Corps of the Army, for the Year 1825-26 and 1827-28.

	Average cost.	Average stable expense, &c., until dispatched to the several corps from the Presidency.	Average travelling expense until delivered over at					Average cost of a horse when delivered over at				
			Poona.	Kaira.	Deesa.	Rajcote.	Sholapore.	Poona.	Kaira.	Deesa.	Rajcote.	Sholapore.
	rs.	rs.	rs.	rs.	rs.	rs.	rs.	rs.	rs.	rs.	rs.	rs.
1825-26.												
Average of the horses purchased by the Agent in the Gulf for European cavalry	427[1]	10	14	46	53	67	..	451	483	490	504	..
Ditto, ditto, for Native cavalry	371[1]	10	14	46	54	67	..	395	427	434	448	..
Average of horses purchased by the Commissary-general at Bombay for European cavalry	475	10	14	46	53	67	..	499	531	538	552	..
Ditto, for Native cavalry	395	10	14	46	53	67	..	429	451	458	472	..
1827-28.												
Average purchase for European cavalry at Bombay	550	20	12	..	..	..	..	582	..	..	..	..
Ditto, ditto, for Native cavalry	488	20	12	..	..	..	..	510	..	..	..	..

[1] Exclusive of the Agent's pay of 600 rupees per mensem.

Abstract showing the Price of Horses purchased by the Commissariat on the spot, in 1825-26 and 1827-28, at

	Kaira.	Poona.	Rajcote.	Bhooj.
Average for European cavalry	397	400		
Ditto for Native cavalry	350	377	313	378.

Abstract showing the Prices paid by the Commissariat in 1830-31 on purchases by Commanding Officers on the spot.

	Poona.	Guzerat.	Bombay.
European cavalry	554	None.	None.

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